



Relevance of the Job Characteristic Model in an ICT company - A Great Place to Work

Master's Thesis

Taavi Sorsa

September 17, 2017

Aalto University School of Business

ABSTRACT

Author	Taavi Sorsa
Title of Thesis	Relevance of the Job Characteristic Model in an ICT company - A Great Place to Work
Degree programme	Management and International Business
Advisor	Olli Pekka Kauppila
Year of Approval	2017

The validity of Hackman and Oldman's (1976) Job Characteristics Model (JCM) has been assessed over 40 years. It has been modified and extended to correspond to working life issues relevant at each time it has been studied. Our society is referred to as a knowledge society, where all spheres of human life depend on the ability to create, distribute and share knowledge. Therefore, there is reason to question whether the original JCM corresponds to current working life challenges. In the present research, the intention is to study whether the JCM is still relevant in modern knowledge-intensive organizations and if modifications are needed.

The research was a qualitative study by nature. The empirical part of the study was formed around semi-structured interviews and the research data was based on the interviews, the target company's background materials and observations during the research process. The research questions were based on the background theories around the JCM.

The research indicated that the JCM is still relevant in modern working life circumstances, but needs modification to be more useful. The JCM includes five core job dimensions: task variety, task identity, task significance, autonomy and feedback. According to the model's developers, the core job dimensions are mediated by critical psychological states leading to personal and work outcomes. The personal and work outcomes are high internal work motivation, high quality work performance, high satisfaction with the work and low absenteeism and turnover. According to the model's developers, employee growth need strength (GNS) and context satisfaction are moderating elements between the core job dimensions and the personal and work outcomes. The present research reveals that all the core job dimensions are still relevant, but they have different power in forming the personal and work outcomes. People's autonomy is by far the most powerful job dimension which also influences the formation of the other core job dimensions. A new core job dimension was found, good care of people, influencing all the personnel and work outcomes. Furthermore, a good system of selecting people supporting personnel's high GNS levels was added to the model.

Key Words: *Job Characteristics Model, work variety, work identity autonomy, feedback, job satisfaction, internal motivation.*

TIIVISTELMÄ

Tekijä	Taavi Sorsa
Työn nimi	<i>The Job Characteristic Model:n</i> relevanttius ICT-yrityksessä, hyväksi koetussa työpaikassa
Koulutusohjelma	Johtamisen laitos
Työn ohjaaja	Olli Pekka Kauppila
Hyväksymisvuosi	2017

Hackman and Oldmanin (1976) Job Characteristics Model -mallia (JCM) on arvioitu ja tutkittu yli 40 vuotta. Sitä on muotoiltu ja laajennettu vastaamaan kulloinkin vallitsevia työelämän haasteita. Nykyistä yhteiskuntaamme kutsutaan tietoyhteiskunnaksi, jossa kaikki ihmisten elämään piiriin kuuluvat asiat riippuvat ihmisten kyvystä luoda, levittää ja jakaa tietoa. Siksi on syytä epäillä, että alun perin kehitetty JCM-malli ei täysin vastaa nykyisten työyhteisöjen haasteita. Tämän työn tarkoitus on tutkia, onko JCM-malli sellaisenaan vielä relevantti moderneissa työyhteisöorganisaatioissa, vai onko tarvetta mallin muutoksille.

Tutkimus on luonteeltaan laadullinen. Empiirinen tutkimusosuus muodostuu puolistrukturoitujen haastattelujen ympärille, ja tiedon keruu perustuu haastatteluihin, kohdeorganisaation taustamateriaaleihin ja toiminnan tarkasteluun haastattelujen lomassa. Tutkimuskysymykset perustuvat JCM-malliin liittyviin aiempiin tutkimuksiin.

Tutkimus osoittaa, että JCM-malli on relevantti myös nykyisissä työympäristöissä, mutta mallin käyttökelpoisuus vaatii joitakin muutoksia. JCM sisältää viisi työn ydindimensiota: työn vaihtelevuus, identiteetti, merkitys, autonomia ja palaute työsuorituksista. Alkuperäisen mallin kehittäjien mukaan työn ydindimensioita välittävät ihmisten psykologiset tilat, jotka johtavat henkilökohtaisiin ja työhön liittyviin tuloksiin. Tuloksia ovat ihmisten korkea sisäinen motivaatio, laadukkaat työn tulokset, korkea tyytyväisyys, vähäiset poissaolot työstä ja alhainen vaihtuvuus. Mallin kehittäjien mukaan ihmisten työssä kasvun tarpeet ja tilannetekijät toimivat työn tasoittavina tekijöinä. Tämä tutkimus paljastaa, että mallissa käytetyt työn dimensiot ovat edelleen relevantteja, mutta eri dimensioilla on erilainen painoarvo työn tulosten muodostamisessa. Ylivoimaisesti suurin teho näyttää olevan työntekijöiden autonomialla, joka on myös muiden työn dimensioiden taustalla. Tutkimuksen perusteella malliin on lisätty uusi työn dimensio, työntekijöistä huolehtiminen, jolla näyttää olevan heijastevaikutuksia kaikkiin työn tuloksiin. Lisäksi malliin on lisätty työntekijöiden huolellinen valinta, jota tarvitaan kehitys- ja kasvuhakuisen organisaation muodostamisessa.

Avainsanat: *Job Characteristics Model, vaihtelevuus, identiteetti, autonomia, palaute, tyytyväisyys, sisäinen motivaatio.*

Contents

1	Introduction.....	5
1.1	Research Background.....	5
1.2	Research Question.....	6
1.3	Thesis Structure.....	7
2	Theoretical Background.....	8
2.1	The Job Characteristics Model.....	8
2.2	The Core Job Dimensions	11
2.2.1	Task Variety, Task Identity and Task Significance	11
2.2.2	Autonomy	13
2.2.3	Feedback	15
2.3	Critical Psychological States	16
2.4	Formation of Personal and Work Outcomes	17
2.4.1	High Internal Work Motivation	18
2.4.2	High Quality Work Performance	20
2.4.3	High Satisfaction in the Work.....	21
2.4.4	Low Absenteeism and Turnover	22
2.5	Moderating Elements – GNS and Context Satisfaction	24
2.5.1	Growth Need Strength	24
2.5.2	Context Satisfaction	27
2.6	Summary of the Theory.....	28
3	Research Methodology	30
3.1	Case Study Research	31
3.2	Data Collection and Analysis.....	33
4	Findings.....	38
4.1	Core Job Dimensions	39
4.2	Moderating Elements - GNS and Context Satisfaction.....	44
4.2.1	Organization Personnel	44
4.2.2	Context Satisfaction	48
4.3	Personal and Work Outcomes	52
4.3.1	High Internal Work Motivation	52
4.3.2	High Quality Work Performance	54
4.3.3	High Satisfaction with the Work.....	57
4.3.4	Low Absenteeism and Turnover	59
5	Discussion	62
5.1	The Main Findings	63

5.2	Limitations	67
5.3	Conclusions and Future Research	67
	References.....	69
	Internet references.....	72
	Appendices:.....	73
	Appendix 1: Interview Themes.....	73
	Appendix 2: Interview Questions	73

1 Introduction

1.1 Research Background

Particularly in knowledge-intensive organizations, such as in the ICT industry, personnel are the most important if not the only intangible asset in use in the business, and therefore are a source of sustained competitive advantage. As the ICT industry evolves, the competition also evolves, so optimization in the ICT industry is essential for survival (Chang, 2015). Work is becoming cognitively complex and demanding, and therefore the rise of knowledge work has gained increasing interest from researchers. Therefore, in regard to working life issues, researchers are moving from job design to work design and from task characteristics to work characteristics (Hernaus & Mikulic, 2014). Working life issues are often researched based on the framework of a famous model, the Job Characteristics Model, developed by J. Richard Hackman and G. Oldman in the 1970s (e.g. Humphrey et al., 2007; Fried & Ferris, 1987; Hackman & Oldman, 1976: 80; Dodd & Gangster, 1996; Jong, 2016; Jonge et al., 1999), which is the focus in the present research.

The intention of the present research is to study the relevance of the Job Characteristics Model (JCM) (Hackman & Oldham, 1976: 80) in a modern knowledge-intensive organization, a Great Place to Work (GPTW) winner. GPTW winners are chosen by the GPTW institution. This is an international organization founded in New York in 1981. It has offices in 43 countries all over the world, including Finland. The idea for the institution was born when two American economic journalists wrote a book, *The 100 Best Company to Work for in America*. Soon business leaders all over the world adopted the model and the methodology to measure and create good workplaces. They research workplaces globally, covering around 7,000 organizations and 12 million workers (www.greatplacetowork.fi). According to the institution, fulfilling the GPTW criteria indicates good general organizational performance.

Furthermore, in the present research, the intention is to find out if there are needs for modifications to the JCM model in a good workplace. The model has ignited a great deal of research on work, and also extensions to the model (e.g. Humphrey,

2007; Fried & Ferris, 1987, etc.); however, the original model is the focus in the present research.

The target company is a Finnish software company Vincit Group Oyj, which has taken part and won the GPTW competition many times, in 2016 also at the European level. At the time of writing, this company is the fastest-growing and most profitable listed company on the Helsinki Stock Market (www.kauppalehti.fi, 8.4.2017). Not all companies participate in the competition, but winning it and being extremely prosperous in a challenging ICT industry, it is reasonable to propose that the company's personnel are treated well and their work life is designed well.

The research framework is based on the JCM. Its basic idea is that organizations have certain job dimensions leading to critical psychological states causing certain personal and work outcomes. The core job dimensions are skill variety, task identity, task significance, work autonomy and feedback. Their purpose is to lead to the critical psychological states, which are experienced meaningfulness of the work, experienced responsibility for the outcomes of the work and knowledge of the actual results of the work activities. The personal and work outcomes are high internal work motivation, high quality work performance, high satisfaction with the work and low absenteeism and turnover. In the model, employee growth need strength and context satisfaction, according to its developers, moderate the relationship between job characteristics and performance (Hackman & Oldman, 1976: 80).

1.2 Research Question

Work life has changed a great deal since the original JCM was developed. Our society is referred to as a knowledge society, where all spheres of human life depend on the ability to create, distribute and share knowledge (Mladkova, 2011). As work life has changed so much, especially in the western world, from traditional manufacturing to knowledge-intensive work (Chang, 2015), it is reasonable to question whether the over 40 years old JCM model as such is relevant in modern organizations.

The intention in the present research is to find out whether the JCM is still relevant and if it requires modifications when creating a good workplace in knowledge work in the ICT industry. It studies good workplace formation generally from the original JCM's point of view and whether the model needs any modifications in modern work organizations. As mentioned, the JCM has been researched a great deal, and several extensions have been proposed. However further study is needed in regard to good workplace contexts, especially in a knowledge organization, and therefore the original model is taken for a framework. So, the research question is:

Is the JCM model still relevant in modern knowledge-intensive organizations, making a good workplace, especially in the ICT industry, and what are the possible needs for the model's modification?

For the target organization a company was purposefully chosen that has been acknowledged as a good workplace and has had especially good success in its business. The company's win in the Great Place to Work competition was issued by the GPTW institution. It researches hundreds of organizations annually all over the world. It has come to the conclusion that positive employee relations effectively serve as an intangible and enduring asset and therefore are a source of sustained competitive advantage at the firm level (Fulmer et al., 2003). According to van Marrewijk (2004), the main dimensions of a Great Place to Work are credibility, respect, fairness, pride and camaraderie. In GPTW organizations, communication is open throughout the organization, people are supported in their challenges and personnel are committed and motivated and enjoy their jobs. Everything is based on trust between people in the organizations (Fulmer et al., 2003). Therefore, in the present research it is reasonable to mirror the relevance of the original JCM in a Great Place to Work organization.

1.3 Thesis Structure

This thesis is divided into four main parts. The first part describes the main theoretical themes: the Job Characteristics Model (JCM) (Hackman & Oldman, 1976: 80) around which the research is formed: the core job dimensions, critical psychological states and the outcomes formation based on them, with people's growth need

strength and context satisfaction being in a moderating role. The second part describes the research methodology and presents the target company and the data collection method with data analysis. The third part analyzes the findings of the research based on the background theories. Finally, the research draws conclusions on the research findings and proposes some further research which would be interesting in the present context.

2 Theoretical Background

In this chapter, the theoretical base is elaborated, examining the Job Characteristics Model (JCM). Firstly, the model is described in general and secondly the core job dimensions are described in detail with their mediating elements. Thirdly, the theories on how the core job dimensions have been regarded to cause worker personal and work outcomes are described, and finally conclusions about the theories are reached.

2.1 The Job Characteristics Model

The general framework of the research is based on the famous Job Characteristic Model (JCM) developed by Hackman and Oldham (1976). In the research context, the model is described from the personnel motivation point of view, regarding how workers' jobs can be developed to maximize employees' efforts.

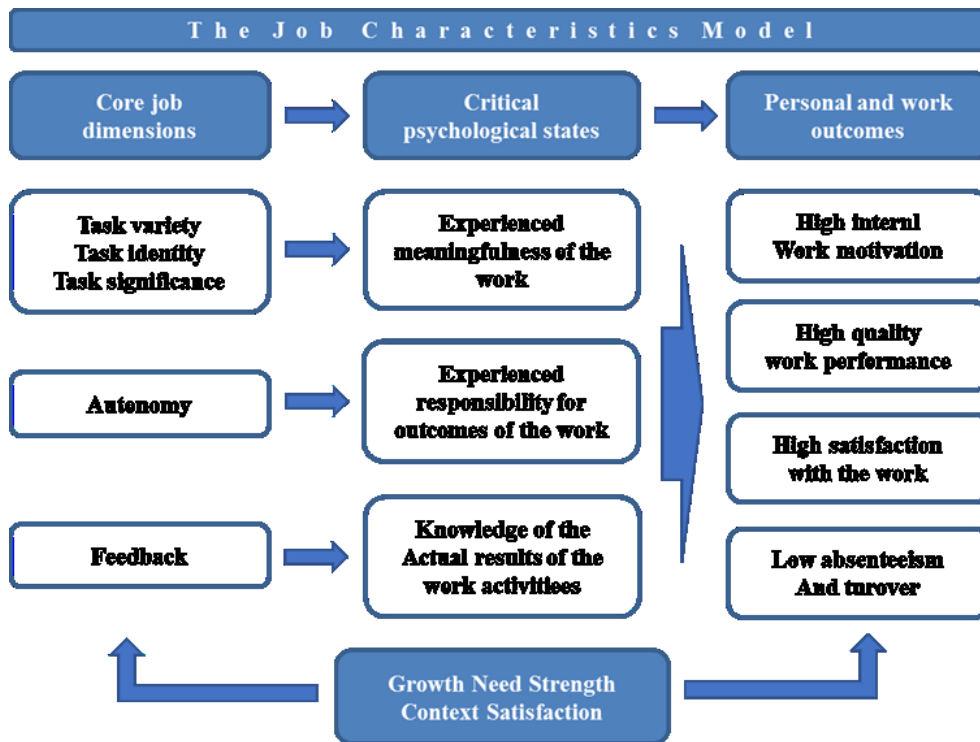


Figure 1: The Job Characteristics Model by Hackman & Oldman (1976: 80)

In the model, the core job dimensions are the decisive factors adjusting which of certain critical psychological states are pursued to reach workers' personal and work outcomes. The first three factors, task variety, task identity and task significance, influence the worker's experienced work meaningfulness. The second factor, the autonomy of a worker, leads to an experience of responsibility for work outcomes, and the third, feedback, gives to worker information about their work activity results (Hackman & Oldman, 1976).

In this model, all the critical psychological states together are proposed to cause an intrinsically motivated worker, resulting in certain worker personal outcomes: high internal work motivation, high quality work performance, high satisfaction with the work and low absenteeism and turnover (Hackman & Oldman, 1976: 80). Hackman and Oldman's (1976) theoretical model does not specifically argue that the motivational characteristics only relate to the five outcomes, but argues more generally that they will impact positive personal and work outcomes (Humphrey et al., 2007). Therefore, this gives opportunities and needs for extensions (e.g. Humphrey, 2007; Fried & Ferris, 1987), which is partly the intention of the present research.

Fried and Ferris (1987), researching the validity of the model, talk about criticisms of the objective and perceived relationships of job characteristics, but conclude in their research that they are deeply related (Fried & Ferris, 1987).

Employee growth need strength (GNS) and context satisfaction, added later to the model, according to the model developers moderate the relationship between job characteristics and performance. The moderating effect of GNS and context satisfaction has been a little controversial among researchers and not all researchers support it (e.g. Tieg et al., 1992), which is described in more detail later in this section.

At the JCM's heart is the premise that leaders can shape intrinsic motivation by modifying work structures, which is seen to influence employee efforts and good personal and work outcomes (Piccolo, 2010). Hackman and Oldman (1976) propose that intrinsically motivated jobs are characterized by a high level of skill variety, task identity, task significance, job autonomy and job feedback. Fried and Ferris (1987) state that all the core job dimensions are strongly related to job satisfaction, growth satisfaction and internal work motivation. They are expected to increase positive behavior as job performance and attitudes such as job satisfaction and decrease negative behavioral outcomes such as absenteeism (Humphrey et al., 2007).

In the model, there is only one common arrow from the critical psychological states to the personal and work outcomes, which means the model developers thought that all outcomes are reached from all the critical psychological states. However, most of the research concerning the JCM has omitted the critical psychological states, focusing instead on the direct impact of the core job dimensions on the outcomes (a two-stage model) (Renn & Vandenberg, 1995; Behson et al., 2000). Based on the two-stage model, there are many different studies on how the personal and work outcomes are reached by different job dimension combinations and what are the mediator elements (e.g. Humphrey et al., 2007; Rentsch & Steel, 1998; Park & Searcy, 2011; Dodd & Gangster, 1996; Jonge et al., 1999; Jong, 2016; Kuvaas et al., 2016): this will be discussed later in the theory section.

To reach good personal and work outcomes, managers can change the core job dimension factors. Robbins and Judge (2016) suggested actions such as combining tasks, forming natural work units, establishing client relationships, expanding jobs vertically and opening feedback channels to the job results (Robbins & Judge, 2016). In general, managers can also use all possible motivating means, modern leadership systems and new organizational designs in connection to the job design when pursuing the best possible personal and work outcomes. However, the present research studies the job characteristics and their outcomes from the original JCM point of view. The target organization is a knowledge-intensive ICT company with its special features, so the meaning of the JCM in the knowledge-intensive organization context is discussed. Next, the JCM core job dimensions are described in detail.

2.2 The Core Job Dimensions

According to Hackman and Oldman (1976: 80) the core job dimensions are the factors that change which of certain psychological states can be reached, which according to the original JCM cause certain personal and work outcomes. The model developers postulate that people's growth need strength and context satisfaction are moderating elements of the job characteristics and personal and work outcomes. Next the JCM's core job dimensions and their mediating elements are presented.

2.2.1 Task Variety, Task Identity and Task Significance

In the JCM, task variety, task identity and task significance are the job properties which are seen to lead to experienced meaningfulness of the work (Hackman & Oldman, 1976: 80). The theory proposes that jobs high in task variety, task identity and task significance offer purposeful motivating striving, which increases the feeling the worker is doing something important and has significant and sense-making goals. It has mechanisms through which personality, task attributes and social demands affect volitional choice and action at work (Barrick et al., 2013). It is a relatively selfish endeavor for a worker to search for a state of importance in a workplace. In general, the JCM's first core job dimensions are said to be relatively individualistic, about the relationship between the employee and their work

(Robbins & Judge, 2016). Meaningfulness and purposefulness arise from a person's intrinsic sources associated with personality traits and the goal fulfillment, therefore it is hard to be influenced outside the person. Next the first three core job dimensions are described with definitions (Robbins & Judge, 2016).

Task Variety

In task variety, the question is about how much people feel their job requires different activities using special skills and talents (Hackman & Oldham, 1976: 80). Barrick et al. (2013) argue that the personal traits of a worker also influence how a worker experiences their tasks. They posit that the worker's personal ability (GNS) and situational factors (context satisfaction) in certain social contexts are decisive for what opportunity they have to use their different skills in a variety of tasks: former work experiences, educational background and other personal skills such as the acquisition of knowledge and the ability to learn, etc. Skilled and high need strength (GNS) individuals are motivated only by challenging tasks and vice versa (Barrick et al., 2013).

Task variety in the present research is important in the sense that the research focus is on knowledge work. Knowledge work involves thinking, creating, developing and sharing knowledge; it is therefore mostly intangible. Knowledge-intensive work is not linear in its nature and because of the tacit nature of information it is very difficult to control (Reinhard et al., 2011). Knowledge-intensive tasks resist standardization because of their contingent nature: they are non-routine and often include high technology use of information technology devices. Often, knowledge-intensive work demands an understanding of the broad context of the knowledge and requires the worker to have a good education, intelligence and experience. Because of the demanding nature of the work, sometimes the worker themselves are the only person who can decide on their contribution to their work. They literally own the means of work production and carry knowledge, information and know-how skills in their heads (Nelson & McCann, 2011).

Park and Searcy (2011) talked about the quality-competitive environment in various and complex jobs, as in the ICT industry, in connection to employee mental well-being related to another core job dimension, job autonomy (Park & Searcy,

2011). According to Rentsch and Steel (1998) enriched jobs have a positive influence only on 'high need for achievement' people (Rentsch & Steel, 1998). These and connections to the other core job dimensions in pursuing good personal and work outcomes are described later in the theory section.

Task Identity

Task identity describes how the job is experienced as a whole. Many people are motivated when handling larger parts of the work process so that they themselves can decide different phases and timetable of the work execution, completing a whole piece of the work from start to finish. This requires the worker to have the skills to cope with all of the work process phases, or at least team members to help (Hackman & Oldham, 1976: 80).

Task Significance

Task significance means the degree to which the job outcomes have a substantial impact on others in the immediate organization or outside, and if the job supports the mission and values of the organization (Hackman & Oldham, 1980). Particularly extrovert people with leadership and power over others want their results to be seen by others. In addition, in the care business, people can enjoy helping patients and getting feedback on their job performance. This is a very important part of the formation of intrinsic motivation (Barrick et al., 2013).

2.2.2 Autonomy

In the literature review concerning the JCM and its outcome formation, job autonomy is the most distinctive aspect that affects the achievement of personal and work outcomes. With regard to the formation of personal and work outcomes, autonomy is a part of almost all of the combinations by which a certain outcome is reached (e.g. Dodd & Gangster, 1996; Piccolo et al., 2010; Park & Searcy, 2011; 2014; Pentareddy & Suganthi, 2014; Sripirabaa & Maheswari, 2015).

Autonomy means a worker's freedom to decide their work: discretion in decision-making, work methods and work scheduling. It is related to work variety, where a worker has a variety of skills in use. In that case, the worker can decide how to execute their work challenges independently. They have a feeling of power over

his work environment without anybody guiding them (Hackman & Oldham, 1976: 80). Jong (2016) talks about job decision latitude and job control as a means for dealing with demanding situations. This refers to a perceived opportunity to determine the nature of tasks or problems and act without consultation or permission and the extent to which a worker has control over their task. This provides a sense of personal responsibility for a worker to complete their work (Jong, 2016).

Autonomy is close to theories such as self-determination theory (Gagne & Deci, 2005) and psychological empowerment theory (Seubert, Wang & Courtright, 2011). Sripirabaa and Maheswari (2015) talk about autonomy's importance in connection to employee risk-taking capability and employee creativity when employees are able to make their own choices (Sripirabaa & Maheswari, 2015). Job autonomy is also close to modern leadership theories from the empowerment point of view (Pentareddy & Suganthi, 2014), and ethical leadership features in connection to task significance perception (Piccolo et al., 2010), which will be discussed later in the theory section.

Worker autonomy causes the worker to experience responsibility for the outcomes of the work (Hackman & Oldman, 1980). The worker experiences a sense of choice to be a decision-maker about their own work only if their own performance has a direct connection to the results. A sense of autonomy and competency gives a sense of job satisfaction with self-determined types of traits (Chang, 2015). Chang talks about emotional intelligence giving an individual a perception of an internal locus of control, which provides an intrinsic motivator to repeat a certain behavior. People are motivated to gain control and understanding of important aspects of the work environment and pursue personal growth opportunities (Barrick et al., 2013). On the other hand, Ryan and Deci (2000) state that threats, deadlines, directives and competition pressures diminish the opportunity for self-direction and thus autonomy, diminishing intrinsic motivation (Ryan & Deci, 2000). They also state that people seeking autonomy can act as team members striving for common goals but still feel autonomy. As mentioned, autonomy is an important part of many job dimension combinations by which personal and work outcomes are pursued. Many researchers support it, such as Behson et al. (2000), who state that autonomy is the core job dimension with the strongest relationship

to the outcome variables (Behson et al., 20000). Its strong influences are described in more detail in Section 2.4.

2.2.3 Feedback

To determine their work success, people want to know the results of their work performance, so they need feedback on their work. According to Hackman and Oldman (1976: 80) feedback from the job is the extent to which a job imparts information about an individual performance (Hackman & Oldman, 1976: 80). When employees understand, accept and take actions in accordance with feedback, their performance and motivation can be enhanced. It provides additional information about what is expected on the job and how current responsibilities connect to the organization's goals or potential roles in the organization (Jong, 2016). Feedback allows individuals to compare their behavior to goals and determine whether any behavior or goal adjustments are needed (Dodd & Gangster, 1996).

Walsh et al. (1980) divide feedback in two job characteristic components: an information component including supervisor and task feedback and an action component including task variety and autonomy (Walsh et al., 1980). According to Griffin et al (2001), the supervisor is important, but the higher the working autonomy the less supervisor feedback is needed (Griffin et al., 2001) in the formation of job characteristics outcomes. Task feedback is where the job owner gets direct feedback from the job itself and is connected to employee autonomy. Employees can also get feedback from co-workers and from the role incumbent's perception of organizational policies and practices (Walsh et al., 1980).

In the JCM, the critical psychological state, knowledge of results of worker's activities, is caused by feedback (Hackman & Oldman, 1980). When searching for intrinsic motivation and job satisfaction, a worker must get information on the work results. If the results are good, the worker gets job satisfaction and if something needs to be improved, they can influence it by changing the work performance. Positive feedback has been found to enhance intrinsic motivation, whereas negative feedback diminishes it (Jong, 2016). According to Uruthirapathy and Grant's research (2014) on ICT personnel behavior, work-related feedback as

such may cause higher motivation, job satisfaction and a lower need to leave the organization (Uruthirapathy & Grant, 2015). Walsh et al. (1980) connect feedback to role clarity. A worker must know well what needs to be done, know exactly how to do it, but importantly what they have done. So, feedback from the task itself is related to job satisfaction through the contribution of role clarity (Walsh et al., 1980).

When pursuing personal and work outcomes, as noticed, feedback can itself influence positive outcomes, but mostly the outcomes can be reached in connection with the other dimensions. For instance, proper feedback from the job itself causes job satisfaction and high internal work motivation together with high task identity perception (Walsh et al., 1980), which leads to commitment to the organization. According to Jong (2016), feedback and job autonomy together mitigate the negative effect of role ambiguity on employee satisfaction (Jong, 2016), and Dodd and Gangster (1996) have come to the conclusion that feedback and autonomy together cause high quality work performance. The influence on these and the other core job dimensions combinations on personal and work outcomes are described in Section 2.4. Next the critical psychological states caused by the core job dimensions are described.

2.3 Critical Psychological States

The JCM developers Hackman and Oldman (1976) postulate that all critical psychological states (CPS), experienced meaningfulness of the work, experienced responsibility for the work and knowledge of the results of the work activities, mediate the core job dimensions and the personal and work outcomes (“causal core of the model”). They note that the CPS explains high job satisfaction and motivation, arguing especially that all of them are needed when maximizing workers’ self-generated motivation (Hackman & Oldman, 1976).

However, some later studies have not fully supported the model developers’ arguments. For instance, Renn and Vandenberg’s (1995) research findings do not support the requirement that all of the CPS are needed to maximize the explanation of work outcomes; however, they propose that they should not be completely excluded as they have significant explanatory power (Renn & Vandenberg, 1995).

They argue that the model's core job dimensions may have direct and indirect effects on personal and work outcomes. Behson et al. (2000) talk about a three-stage model and two-stage model, of which the first includes all the CPS and the latter excludes them, explaining the core job dimensions' direct influences on personal and work outcomes (Behson et al., 2000). Their analysis suggests that the two-stage model may provide a better fit to the available data than the three-stage model originally proposed (Hackman & Oldman, 1976) and may demonstrate an adequate fit for the JCM's explanatory power. Furthermore, several studies state that not all the CPS are needed when maximizing people's internal motivation (e.g. Fried & Ferris, 1987; Renn & Vandenberg, 1995; Behson et al., 2000) and they can be achieved with suitable bundles of different core job dimensions.

Hackman and Oldman's (1976) job characteristics model has stimulated hundreds of published empirical studies. In their meta-analysis of 76 studies, Fried and Ferris (1987) found that only eight studies included the CPS and only three examined the CPS mediation hypothesis (Behson et al., 2000). So, most researches have omitted the CPS, focusing instead on the direct impact of the core job characteristics on the outcomes (a two-stage model.). The reason for this is not necessarily because of empirical evidence but because of analytical difficulties associated with testing the mediation hypothesis (Renn & Vandenberg, 1995)

Because of the rarity of the studies available of the CPS's influences on the JCM and sufficiency of the two-stage model as an explanation power, the present research also omits it and studies the JCM relevance using the two-stage model.

2.4 Formation of Personal and Work Outcomes

This section describes theories of the formation of personal and work outcomes by different core job dimension bundles in the JCM using a two-stage model, omitting the critical psychological states from the model, as described in the previous section. The original JCM suggested that all the core job characteristics together cause psychological states and behavioral outcomes at work (Hackman & Oldman, 1976). However according to Fried and Ferris (1987), specific outcomes are associated only or primarily with some of the job characteristics rather than with others (Fried & Ferris, 1987). For instance, absenteeism may be reduced primarily by developing

task variety, task identity and autonomy, or work performance improvements may be reached primarily by developing autonomy, task variety and job feedback. There are many studies covering different outcome formation by different job dimension combinations (e.g. Humphrey et al., 2007; Fried & Ferris, 1987; Jong, 2016; Singh et al., 2016; Piccolo, 2010; Pentarteddy & Suganthi, 2015; Rentsch & Steel, 1998); Uruthirapathy & Grant, 2015, etc.). Next the mechanisms for all the JCM model outcomes proposed in this research are described.

2.4.1 High Internal Work Motivation

The JCM developers propose that people's internal motivation is at the heart of the model and is kind of a general prerequisite for all good work outcomes (Hackman & Oldman, 1976: 80). The model states that the five core job characteristics can be combined into a single index or motivating potential score (MPS), influencing the individual's feelings and behavior. According to this, all the core job dimensions have equal influence in the model (Fried & Ferris, 1987). However, there are certain dimensions, such as job significance and autonomy, which together have been found to have a direct influence on people's internal motivation, influencing other hoped-for outcomes such as increasing work efforts and better work performances (e.g. Humphrey et al., 2007; Piccolo et al., 2010; Chen & Chiu, 2009; Rentsch & Steel, 1998). These are presented later in this chapter.

As a construct, people's internal or intrinsic motivation is the motivation to engage in a task for its own sake – out of interest and enjoyment, not as a means to gain another reward (Isen and Reeve, 2006). It is defined as the doing of an activity for its inherent satisfaction rather than for some separate consequences. As Ryan and Deci (2000) describe, people from birth onward in their healthiest states are active, inquisitive, curious and playful creatures, displaying a ubiquitous readiness to learn and explore. They do not require extraneous incentives to do so (Ryan & Deci, 2000). People with high internal motivation are more likely to be involved in their jobs because of their desire to devote more effort to their job (Chen & Chiu, 2009). Intrinsic motivation initiates, guides and maintains goal-oriented behavior, therefore intrinsically motivated people want to work hard (Singh et al., 2016). Intrinsic motivated people's behavior is in fact very selfish, as they do something for their own enjoyment, not for others. So intrinsic motivation rises

from the individual inside, according to the job challenge itself (Ryan & Deci, 2000).

According to Hackman and Oldman (1976), leaders can influence employees' intrinsic motivation level by structuring the objective characteristics of the work itself (Hackman & Oldman, 1976), as the motivational influence is ignited inside the worker, especially in high-GNS individuals. As mentioned earlier, in complex job challenges such as knowledge work, when the worker is high in GNS, the motivational effect is maximized.

According to Piccolo et al. (2010), an ethical leadership style in particular ignites in people a feeling of high job significance and by empowering them influences high work motivation. According to Piccolo et al.'s (2010) definition, ethical leaders are effective and inspirational, relying on idealistic visions and persuasive communication styles when motivating people. They emphasize fair treatment, shared values and integrity in common personnel and transactions. They inspire favorable behaviors among employees and encourage a high level of pride and commitment to the organization. Ethical leaders' central principles are honesty, fairness and trustworthiness (Piccolo et al., 2010). By their leadership style they cause people to feel they are doing something important. Ethical leaders empower their subordinates, give them the opportunity to express themselves, influence their decision-making and give them control over their own work, making them less dependent on the organization's leaders (Piccolo et al., 2010).

In the combination of high job significance and autonomy, people feel their work is meaningful and when they feel a wide sense of control, they get intrinsically motivated (Piccolo et al., 2010; Humphrey et al., 2007; Singh et al., 2016; Jong, 2016). Conversely, if the work environment characteristics are perceived to be controlling and less meaningful, this inhibits intrinsic motivation and leads to higher level of frustration and dissatisfaction (Jong, 2010). High intrinsic motivation may lead to good results in other outcomes: work performance, job satisfaction and organizational commitment in a combination of the other core job dimensions (Hackman & Oldman, 1976: 80), as will be stated in the next sections.

2.4.2 High Quality Work Performance

Through the work design, organizations can significantly enhance their bottom-line performance by designing challenging and cognitively demanding configurations for work tasks. The potential for work performance improvement is high especially in complex knowledge work such as in the ICT industry (Hernaus & Mikulic, 2014), particularly in high-GNS individuals, as mentioned earlier.

The original JCM model postulates that the whole core job dimensions bundle is also behind work performance. However, several researches have proven that the bundle of characteristics of autonomy, job variety and feedback are mainly behind quality work performance (e.g. Humphrey et al., 2007; Dodd & Gangster, 1996; Sripirabaa & Maheswari, 2015; Kuvaas et al., 2016; Hernaus & Mikulic, 2014). Humphrey et al. (2007) states that job autonomy as such is a robust predictor of work performance, but feedback has increasing influence on it (Humphrey et al., 2007). When people have freedom to work autonomously getting feedback about their performance, they can improve their working methods (Dodd & Gangster, 1996).

According to Dodd and Gangster (1996), people in highly varied of work increase productivity remarkably better than people in non-varied work when work autonomy increases (Dodd & Gangster, 1996). However, in both cases, autonomy has an influence on increasing work performance. In the present research, this result is important, because task variety and high skill needs are inherent in knowledge work, as stated earlier. The same research states that people with high autonomy in complex work increase their performance when feedback increases, whereas feedback has a less remarkable influence on people with low autonomy (Dodd & Gangster, 1996). However, Kuvaas et al. (2016) note that feedback is connected with organization goal setting and if the goals are fixed and absolute standards, they can cause negative effect on work performance. They noted that effective goal-setting theory may require shorter performance cycles and continuous goal setting. Modern leaders empower people, but trust their employees to use their knowledge, skills, abilities and proximity to the task to make discrete judgments (Kuvaas et al., 2016).

All in all, autonomy and feedback together are very important in highly varied work in work performance formation. In particular, people with a high need for achievement, who desire challenges and personal responsibility for outcomes, need feedback and autonomy to make efforts in their work performance (Rentsch & Steel, 1998). As mentioned earlier, intrinsic motivation is also a prerequisite for the formation of people's higher work performance, as it increases people's work efforts, increasing productivity and therefore work performance.

2.4.3 High Satisfaction in the Work

According to Hackman and Oldman (1980), all the perceived job characteristics and intervening psychological states are also correlated with job satisfaction (Hackman & Oldman, 1980). They propose, as mentioned earlier, that job satisfaction together with high motivation increases the other personal and work outcomes of quality work performance and organizational commitment.

Autonomy is regarded to also have a decisive role in the formation of job satisfaction, as many empirical studies support a direct link between autonomy and job satisfaction (e.g. Hackman & Oldman, 1975; Walsh et al., 1980; Jonge et al., 1999; Dodd & Gangster, 1996; Piccolo et al., 2010; Sripirabaa & Maheswari, 2015; Park & Searcy, 2011). For instance, Park and Searcy (2011) have found autonomy has a direct relationship with employees' mental well-being and job satisfaction, especially in quality-competitive organizations, and therefore hinders negative influences, for instance job stress and burnout. This influence is strongest among high-GNS individuals (Singh et al., 2016).

According to Walsch et al (1980), as in the formation of high quality performance, the job dimension bundle of feedback, task variety (job demands) and autonomy play a decisive role in the formation of job satisfaction. When people are empowered in their highly varied work, in the case of complex jobs (high ambiguity), they need feedback to realize their work performance to feel work satisfaction (Walsch et al., 1980). They also point out the perceived importance of autonomy in the formation of job satisfaction because of its influence on the self-attribution of success or failure.

In addition, Jong (2010) states that work performance feedback in highly varied work is important as it mitigates the negative effect of role ambiguity on employee satisfaction, especially significantly in high job autonomy conditions. According to his research, in high job autonomy conditions, when role ambiguity increases, high performance feedback increases work satisfaction and low performance feedback decreases it. In low job autonomy conditions, satisfaction decreases with both high and low performance feedback (Jong, 2010). This is one indication of the special importance of autonomy in the Job Characteristics Model. Task variety as such can also increase job satisfaction, especially in complex knowledge work, as it leads toward better skill utilization therefore a feeling of meaningfulness at the work (Jong, 2010; Walsch et al., 1980; Hernaus & Mikulic, 2014).

2.4.4 Low Absenteeism and Turnover

As mentioned in the introduction, in knowledge-intensive companies such as in the ICT industry, the personnel are the most important, if not the only, tangible asset and therefore companies do not want to lose them to competitors. According to Uruthirapathy and Grant (2015), turnover is especially high among ICT personnel turnover and knowledge-intensive organizations have a need to come up with retention strategies. According to Zargar et al. (2013), high-GNS people have higher expectations regarding their jobs and decide to leave more actively in order to obtain new opportunities, challenges and achievement incentives (Zargar et al., 2013).

According to the original JCM, employee turnover and low absenteeism can also be influenced by the job characteristics design of all the core job dimensions (Hackman & Oldman, 1976: 80). In the model, Hackman and Oldman (1976: 80) postulate that low absenteeism and turnover are kind of by-products of feelings of intrinsic motivation and job satisfaction. However, several studies have found more detailed means of job design which could be the exact measures to influence absenteeism and turnover (e.g. Rentsch & Steel, 1998; Uruthirapathy & Grant, 2015; Pentareddy & Suganthi, 2015; Park & Searcy, 2011).

Rentsch and Steel (1998) insist the core job dimensions such as task variety, task identity and autonomy are correlated negatively and consistently with absence measures, highlighting autonomy and task variety (Rentsch & Steel, 1998). They particularly propose that organizations engage in job enrichment, when it is a question of highly specialized individuals. In addition, Pentareddy & Suganthy (2014) propose that knowledge-intensive organizations, in pursuing people's organizational commitment, enrich jobs with challenging activities and opportunities to utilize all of their skills. The tasks should be wholesome and have a potential to make a difference to the organization or the customers. They also propose that people's psychological empowerment (autonomy) mediates the relationship between job characteristics and affective commitment. They propose further that feedback should be built into the job design, helping people improve and appreciate the work, leading to affective commitment (Pentareddy & Suganthy, 2014).

Fried and Ferris (1987) note that absenteeism can be reduced through the development of task variety, autonomy and feedback. They also note a tendency for task significance to have a positive influence on absenteeism and turnover, but the influence could be mitigated through proper feedback (Fried & Ferris, 1987). However, Uruthirapathy and Grant (2015), when researching non-ICT personnel and ICT personnel in an ICT organization, note that when all other job characteristics were the same, when non-ICT personnel felt lower significance in their jobs because they felt they did not have much outside interaction, they had greater intention to leave the organization than ICT personnel. They also propose that work-related feedback for both groups influences lower intentions to leave the organization. Park and Searcy (2011) in their research on quality-competitive environments especially emphasize its need in people's mental well-being and organizational commitment, regardless of organizational context (Park & Searcy, 2011).

According to the above-mentioned studies, all the job dimensions seem to support low absenteeism and turnover through different mechanisms, as the original JCM model postulates. The other two personal and work outcomes, internal motivation and job satisfaction, seem to have a supporting effect. Of the core job dimensions, autonomy seems to be emphasized in all the research studying low absenteeism and turnover.

2.5 Moderating Elements – GNS and Context Satisfaction

According to the JCM, people's growth need strength (GNS) and context satisfaction are the moderating elements of the core job dimensions and the personal and work outcomes, which effect, as earlier mentioned, is a little controversial among researchers. Taking the original Hackman and Oldman (1976: 80) proposal as such, when selecting people, organizations must take into consideration their traits and growth need strength features. According to the JCM developers, people have different levels of GNS, and the level influences how effectively they are influenced by the core job dimensions. Next growth need strength as a construct, theories about its JCM moderating effect and issues influencing people selection are discussed. Finally, the work contextual issues proposed to mediate the job characteristics are outlined.

2.5.1 Growth Need Strength

Growth Need Strength as a Construct

In the JCM, growth need strength (GNS) in individuals is defined as the strong need for personal challenge and accomplishment for learning and personal development. These traits refer to learning (learn new things and stretch themselves), achievement (goal orientation) and active looking for growth opportunities (proactive behavior) (Hackman & Oldman, 1980; Graen et al., 1986; Shalley et al., 2009; Zargar et al., 2013). This does not assume all employees appreciate jobs high in motivating potential. Only individuals that have strong growth needs are predicated to develop strong internal motivation when working on complex and challenging jobs, and low growth need individuals are not influenced in the same way in the same situation (Graen et al., 1986; Zargar et al., 2013).

Rentsch and Steel (1998) talk about one element of GNS, the need for achievement (nAch). High nAch individuals desire challenges and personal responsibility (autonomy) for outcomes and personal feedback. They are prone to responding more positively to enriched jobs and challenges than low nAch individuals (Rentsch and Steel, 1998). Low nAch individuals are satisfied with their current work conditions, jobs and challenges, whereas high nAch individuals would like

to advance beyond their present situation by pursuing new levels of attainment (Uruthipathy & Grant, 2015).

Consequently, according to the definitions, high-GNS individuals will perceive such jobs as providing opportunities for considerable self-direction (autonomy), learning and personal accomplishment (Hackman & Oldman, 1980). Different individuals have different moderating effects of GNS in the JCM, which will be described next.

Growth Need Strength as a Moderator in the JCM

In the most recent version of the JCM, Hackman and Oldman (1980) postulate that individuals' reaction to job characteristics and psychological states are moderated by the strength of their need for personal growth and accomplishment at work (GNS) and satisfaction with certain contextual aspects of their work environment. In the JCM research, the linkages between the core job dimensions, the critical psychological states and the personal and work outcomes have been generally supported (e.g. Humphrey, 2007; Dodd & Gangster, 1996; Walsh & Taber, 1980), but GNS as a moderator is more controversial (e.g. Kelly, 1992; Tieg et al., 1992; Rentsch & Steel, 1998).

According to Hackman and Oldman (1980), the influence of GNS as a moderator between the job core dimensions and the personal and work outcomes is stronger with high-GNS individuals than low-GNS individuals (Hackman & Oldman, 1980). For instance, individuals with high GNS feel positively about the challenges presented in enriched jobs and achieving autonomy at work causes work satisfaction and lower absenteeism, whereas individuals with low GNS do not value opportunities offered by the job and they may in fact cause negative influences (Rentsch & Steel, 1998). In addition, according to Singh et al. (2016), employees who have high need for growth and who see their jobs as high on the five core job dimensions have the most positive work outcomes. They argue that most of the research states that they are partly or fully mediated by the critical psychological states (Singh et al., 2016).

According to Barrick et al. (2013), people have individually different personalities and characteristic patterns of thought, emotion and behavior. They can be represented in a five factor model (FFM), which captures the critical stable individual differences in personality. The five personal traits are extraversion (sociable, dominant, ambitious), agreeableness (co-operative, considerate, trusting), conscientiousness (dependable, hardworking, persistent), emotional stability (calm, confident, secure) and openness to experience (imaginative, adaptable, intellectual). These traits guide and direct unique patterns of thought, emotion and behavior. They play important roles in predicting and explaining employee motivation and behavior. So, personal traits together with different GNS features have different moderating effects in different job challenges (Barrick et al., 2013).

Based on the theories, when recruiting and selecting people, organizations must take into consideration candidates' levels of GNS features to maximally influence, through the core job dimensions' design and their traits, how they suit the organization culture and how different job challenges are offered. This is described next.

Recruitment and personnel selection (GNS)

When recruiting people, organizations must take consideration the person-environment (P-E) fit, which involves identifying the compatibility between people and their work environment. P-E fit theory is a theory of human behavior and human choices with a couple of assumptions: the function of the person and environment need to be compatible (Singh et al., 2016). It refers to individuals' congruence with the requirements of their job and the inducements provided to perform it. For instance, Dikkers et al. (2010), when talking about the engagement of proactive personalities, conclude that proactive individuals are not necessarily benefited by organizational support when job demand increases as passive personalities are (Dikkers et al., 2010).

The present research raises questions about knowledge and high quality searching work. As described earlier, knowledge work involves thinking, creating, developing and sharing knowledge, especially in ICT organizations. Knowledge workers are normally highly educated, intelligent, independently thinking, self-managed

and self-motivated individuals (Frick, 2010). Frick (2010) notes they are individuals valued for their ability to gather, analyze, interpret and synthesize information within specific subject areas. Their main tool is their brain and their work results are more or less intangible.

Concerning the JCM characteristics and their functions in a knowledge-intensive organization, the question is how to fit personnel for certain jobs in a certain environment (P-E fit theory). Hernaus and Mikulic (2014) talk about the intellectual nature of knowledge work and the need for a person-job fit. When enriching a job, creating challenging and motivating task bundles in a certain environment, for instance in certain work challenges, this must be aligned with people's and teams' traits (Hernaus & Mikulic, 2014). When organizations have certain challenges in their business, as early as the recruiting stage, personal fit must be taken in consideration. Employees in modern workplaces seek employment at organizations in which they can take pride and earn job assignments that offer an opportunity to have a meaningful impact (Piccolo et al., 2010). It is reasonable to propose that high-GNS individuals have the best chance of suiting these challenges.

2.5.2 Context Satisfaction

In the JCM, according to the model developers, context means a job's external issues such as perceived payment equality, job security and relationships with co-workers and superiors (Tiegs et al., 1992). The reason to bring them into the model as a moderator in the relationship between job characteristics and psychological states was that they can cause dissatisfaction for jobholders and they serve to focus on them: if the employees perceive them as a distraction, they can hinder the response to the motivating properties of jobs. According to the model developers, distraction can happen if employees feel they have inequality in payment systems, they feel insecurity about keeping their jobs or they are not satisfied with their relationships with their co-workers and superiors (Hackman & Oldman, 1980). Hackman and Oldman talk about 'hygiene factors' that are extrinsic to the work itself.

Thus, when employees are satisfied on the extrinsic factors, they can perceive and respond to the motivating potential (Hackman & Oldman, 1980). Therefore, as

high-GNS individuals respond more strongly to the psychological states, employees that are satisfied with their contextual factors of the work environment should also respond more strongly to the presence of the critical psychological states (Tieg et al., 1992). So, according to Oldman & Hackman (1980) the positive relationship between job characteristics and psychological states will be strongest for high-GNS individuals who are not distracted by contextual factors. In this connection, there is a question about the moderating effect of individuals' GNS levels and their context satisfaction between the core job dimensions and the personal and work outcomes. As mentioned earlier, not all researchers fully endorse this moderating linkage

2.6 Summary of the Theory

The theory behind the present research is based on the Job Characteristics Model (Hackman & Oldman, 1976: 80). It has ignited a great deal of different studies around it, and several model extensions (e.g. Humphrey et al., 2007). Many studies support the model itself and the model developers' theories, but there is also some criticism, especially around the moderating effect of GNS and context satisfaction (e.g. Kelly, 1992; Tieg et al., 1992). Furthermore, the critical psychological states are omitted by most JCM researches and outcome formation is mostly described by direct dimension bundle influences (a two-stage model). The present research takes the original JCM model as a research framework describing the core job dimensions' influences using the two-stage model, with GNS and context satisfaction taking the moderating role.

In this theory section, the Job Characteristics Model has been described in general; the core job dimensions, the mediating critical psychological states and the moderating elements of GNS and contextual issues. Finally, theories on how the core job dimensions cause the personal and work outcomes have been described using a two-stage model, omitting the influence of critical psychological states because of the scarcity of research on this. The theory section concludes as follows.

The core job dimensions of task variety, task identity and task significance in the JCM influence people's experienced meaningfulness of their work. Autonomy,

freedom to decide about the work, influences people's experience of responsibility for the outcomes of their work. Feedback gives knowledge on the actual results of the work outcomes. Employee growth need strength and contextual satisfaction are proposed in the original JCM to moderate the core job dimensions' influence on the personal and work outcomes. According to the original JCM, all the core job dimensions are behind the personal and work outcomes (Hackman & Oldman, 1976: 80). However, some core job dimensions as such, especially work autonomy, may cause good personal and work outcomes, but according to the presented theories, often they have special influence mechanisms together in certain bundles (Fried and Ferris, 1987). The personal and work outcomes are formed by the core job dimensions' bundles as follows.

As mentioned severally in the theory section, the JCM model is based on internal motivation formation, at the heart of good personal and work outcomes. However, according to Piccolo et al. (2010), autonomy in combination with task significance may particularly influence the experienced meaningfulness of the work. People feel they are doing something important and at the same time can decide about their working, leading to high internal work motivation.

Several studies have proved that the autonomy, job variety and feedback bundle of characteristics is mainly behind quality work performance (e.g. Humphrey et al., 2007; Dodd & Gangster, 1996; Sripirabaa & Maheswari, 2015; Kuvaas et al., 2016; Hernaus & Mikulic, 2014). Humphrey et al. (2007) note that job autonomy as such is a robust predictor of the high quality work performance in highly varied work and with proper feedback people can develop their working methods.

As in the formation of quality work performance, performance feedback, task variety and autonomy also play a decisive role in the formation of job satisfaction.

When people are empowered in their highly varied work, in the case of complex jobs, they need feedback to realize their work performance success to feel work satisfaction. In addition, task variety as such can increase job satisfaction, especially in complex knowledge work, as it leads toward better skill utilization and a feeling of work meaningfulness (Hernaus & Mikulic, 2014).

In the ICT industry, personnel are the most important if not the only tangible asset and according to Uruthirapathy and Grant (2015), turnover among ICT personnel is especially high. High-GNS people have higher expectations regarding their jobs and decide to leave more actively. According to the original JCM, employee turnover and low absenteeism can be influenced by the job characteristics design of all the core job dimensions (Hackman & Oldman, 1976). According to Rentsch and Steel (1998), task variety, task identity and autonomy are correlated negatively and consistently with people's absence measures, with autonomy and task variety highlighted (Rentsch & Steel, 1998). According to Fried and Ferris (1987), absenteeism and turnover can be reduced through the development of task variety, autonomy and feedback. They also note a tendency for task significance to have a positive influence on absenteeism and turnover, but with proper feedback the influence could be mitigated (Fried & Ferris, 1987).

All in all, this theory section supports the connection of the original JCM job characteristics and outcomes in general, as all the core job dimensions seem to lead to all the personal and work outcomes in different bundles and by different mechanisms. However, the mediating role of the critical psychological states is not represented because of the scarcity of research on them. The theory section has also highlighted the special importance of work autonomy in the formation of all the personal and work outcomes. Although the original JCM has been criticized and extended (e.g. Humphrey et al., 2007) during the last decades, the present study is framed based on the original theory. The results chapter mirrors the original JCM and the theories around it in a modern organization work design, looking at how the model features are designed and influence work outcomes to make a good workplace, and also investigating whether there are needs for extensions or modifications to the model.

3 Research Methodology

The research methodology chapter describes how the research process was led. In the research, a qualitative single case study was conducted and the data collection was based on semi-structured interviews, observations and desk study of the company literature. The study's intention was to judge the relevance of the Job Characteristics

Model and needs for its extension in an ICT organization, firstly becoming familiar with the company's background information, secondly interviewing eight company workers and thirdly, when using a relatively long amount of time at their office, observing the company culture in their natural working conditions.

The research process presented in this chapter includes firstly a description of the reasons why the case study suits this research best, secondly a description of the data collection process and finally an analysis of the collected data to check if the data collection succeeded in making reliable research conclusions.

3.1 Case Study Research

Case study research is one of the popular methods of qualitative research. In general, it is a useful method when “how” and “why” questions are being placed to contribute to knowledge of individuals, groups or organizations as a social, political and related real-life phenomenon (Yin, 2009). It is also relevant the more that the questions require an extensive and in-depth description of some phenomenon. According to Eriksson and Kovalainen (2008) “classic case studies are connected to the interpretative, ethnographic and field-research traditions”, which is the case in this research. They also note, “they are very different from experimental, quantitative and deductive research tradition in business research that aim to produce statistical generalizations” (Eriksson & Kovalainen, 2008). Yin (2009) states that a case study is an empirical enquiry investigating a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident. In this research, it was important to undertake the research and interviews in the real-life context, in the company office, as there were also some other nuances to be noted by observing the company culture than those that could be noted only in the interviews.

In the interviews, questions were posed to individuals focusing on the contemporary phenomena of the organization, trying to find out both individual and group perceptions. Through “how” and “why” questions it was possible to gain a deeper understanding of the themes which proved during the discussions to lead to the final findings – how the organization's core job dimensions influence the personal

and work outcomes and if there are other issues behind them. The background data given by the company CEO and observations were relevant information supporting the interviews.

The research path begins with a thorough literature review and posing of research questions and objectives (Yin, 2009). Before the research began, a quite wide literature review of the JCM and theories around it was undertaken, ending up with certain research questions. After the research, the theory background was widened as some new phenomena were discovered during the research process. The research question stayed as it originally was, as the researcher's interest in many ways, but it was realized that there would be more factors behind the phenomena than had been proposed at the beginning of the research.

Often there is only one case in a case study, then we talk about a single case study, but sometimes there are more: a multiple case study (Koskinen et al., 2005). In this research, it is a question of only one case, the Vincit-office Helsinki functions, which is generalized to the whole Vincit Group Oyj. Yin (2009) states that case studies, like experiments, are generalizable to theoretical propositions and not populations or universes. The research question concerns a limited group of phenomena and there are theoretical propositions in the background, so also in that sense a case study was considered to suit this research well. Some other ICT companies were mentioned in the beginning of the research, which have similar company cultures to the research target company and have also won GPTW status. The target company understands them as direct competitors and admits their competencies, as was revealed in many interviews. By widening the phenomenon study, a multiple case study could also have been possible and could have given a more detailed general result.

3.2 Data Collection and Analysis

The Target Organization

The presentation of the target organization is based on the company descriptions of the Helsinki office's CEO, the company web pages (www.vincit.fi), the GPTW report (Vincit Group Oyj, johanna.pystynen@vincit.com, Great Place to Work 2016 Culture Audit, 17.6.2016) and the company's descriptions of the interviewees.

The target organization Vincit Group Oyj is an ICT company founded in 2007. Its turnover in 2016 was about 32 M€ and the company employed 290 people. In 2016, it had offices in Tampere, Helsinki, Savonlinna and Palo Alto, US. This research concentrates on the Helsinki office, employing about 60 people, which represents the whole company in this research. The company has been chosen as the best workplace in Finland in 2014, 2015 and 2016. Furthermore, it won the Great Place to Work competition at the European level. (www.vincit.fi). The company was listed on the Nasdaq Helsinki stock market, on the First North list in autumn 2016. During spring 2017, it was noted to be the fastest-growing and most profitable company on the Nasdaq Helsinki stock market (www.kauppalehti.fi, 8.4.2017, 7:00).

Vincit Group Oyj is led by an executive committee with ten members: CEO, Developing Director, Leader of Strategic Partners, Director of Finance, HR Director, two Sales Directors, Director of International Customers, Director of Solutions and Recruitment Director. The Helsinki office is an independent company named Vincit CoOp Oy, with facilities at Mikonkatu 15, Helsinki.

The leadership culture of the target company is far from traditional. Concerning direct means of working, there are no separate persons in the company leading or telling employees in a traditional managerial way what, how and when to do their work. People's autonomy is emphasized already during the recruitment stage. Working is based on customer projects in teams through a shared leadership manner and the leaders of the employees in each case are customers or the teams they are working for.

The organization is very flat and informal. In the Helsinki office, there are only two administrative persons, the CEO and his assistant. The company CEO is the only official manager and is the boss of all the 60 workers. Figure 2 describes the target organization's structure.

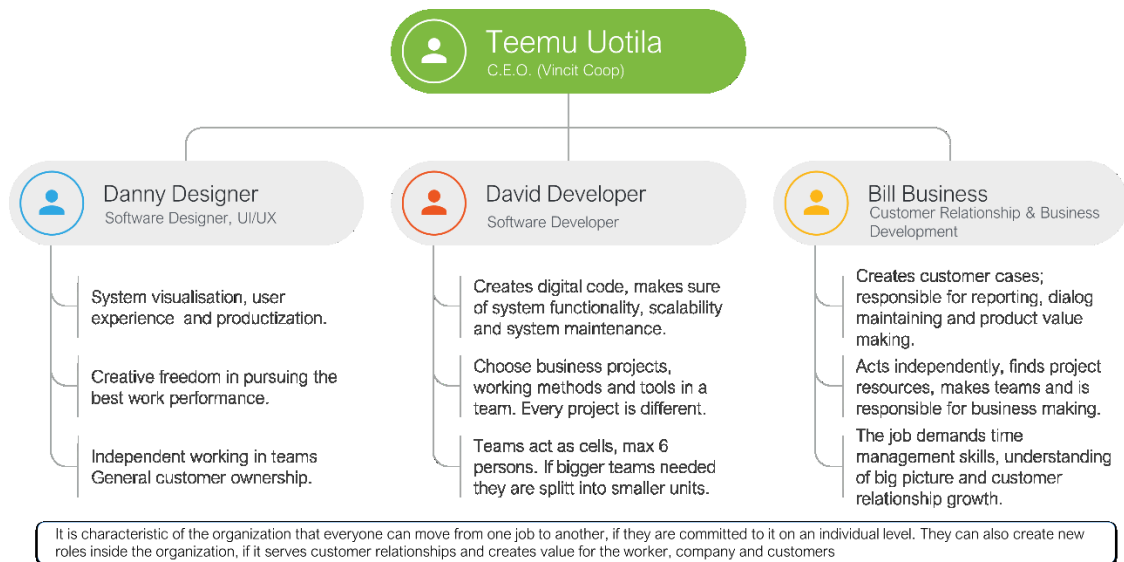


Figure 2; Vincit CoOp Oy organization (CEO Teemu Uotila 30.5.2017)

Work in the organization is based normally on project teams of fewer than ten workers, which execute their customer projects independently without any intervention from the company leaders. Larger teams have team leaders chosen by the team, based on their experience with the project content or willingness to take the role. They coordinate only practical issues, such as timetables and communication, but are not the boss of the team members. Decisions are made together with the team members and the teams operate in a shared leadership manner. Everywhere people's independence is emphasized and everybody is responsible for their work performance. When asking people who they are responsible to, the most popular answer was the customer and their team, not for instance the company CEO, as can be noted in the Findings chapter.

Data Collection

In case studies, data collection normally includes interviews, organizational material reviews and observations (Yin, 2009). The most important part of the data collection was taped interviews, but the company material and observations gave a deeper understanding of the researched phenomena. The primary data collection was based on semi-structured interviews, as that gave the freedom to deepen the themes that proved to be the most important as phenomena. Semi-structured interviews are the most widely used method for gathering qualitative data in both economics and social science (Eriksson & Kovalainen, 2008).

Members of the target organization were interviewed in the Vincit Helsinki office, 45-60 minutes per interview during five days, 8.5.-12.5.2017. The company CEO was to invite more than ten employees for the interviews from all company levels and job roles. For better results, originally, the researcher would have wanted to select the interviewees, interview more than ten people and reserve more than 60 minutes for the interviews, but understanding the company's normal business life, the interview invitation task had to be given to the company CEO. Unfortunately, he was unable to offer more than eight workers as the people in the company were very busy. Of the eight interviewees, four were software designers, two were software developers and the last two were from the administration, including the CEO himself. Five of the interviewees were more experienced workers in the company and three had worked there for less than one year. During the first interviews, it became clear that eight workers were enough, as the phenomena researched, after reading the company material, began to reveal itself as early as in the beginning and was brightened by the end of the interviewing process.

Normally semi-structured interviews follow an interview template created previously by the interviewer, but the interviewees have freedom to answer in their own words and even suggest additional questions (Koskinen et al., 2005). That was the case in these interviews as some issues were prone to be expanded, and question types tried to prepare for that.

Before the interviews, the main themes of the interviews in a template (Appendix 1) were sent to the interviewees, not the questions themselves. Then a list of questions (Appendix 2) was prepared, based on the research theory propositions, handling the themes of the theory section. After the first two interviews, the questions for the last interviews were adjusted to concentrate more on the research core issues and increase the “how” questions. All the interviews were very different as the interviewees had different backgrounds, so the intention was not to follow the question list very slavishly. As Koskinen et al. (2005) note, the questions do not need to be asked in the same order in all interviews and the interviews typically are much more like conversations than formal events. The researcher tried to keep the discussions free and informal, however trying to get answers to the core issues in one way or another as planned originally to come to the general conclusions. After six workers’ interviews new questions were prepared for the last interviewees, the administration personnel, the CEO and his assistant. The intention was to compare worker perceptions with the official managerial endeavors.

The researcher booked the interviews and all but two were organized right away. All interviews were conducted in the company office meeting rooms during five days. Before each interview, the interviewees were asked for permission to tape the discussion and were told the interviewee names would not be revealed in research, so that they could speak more freely. All the interviewees gave permission to tape the discussions.

The interviews were taped using a tablet computer. There are several ways to document interviews, making notes during the interviews and recording the interviews with a tape recorder or even a videotape (Eriksson & Kovalainen, 2008). However, writing notes is not the preferred way of documentation as it confuses the interviewing process if done during the interview, while details are easily missed if it is only done afterwards (Eriksson & Kovalainen, 2008). Therefore, it was decided not to make any notes during the discussions and to trust taping and careful transcription.

Every day during the process, after the interviews, the researcher transcribed the tapes. The longer the interviewee’s work experience in the company, the longer

was their transcribed material. Because of the quite relaxed and free discussion atmosphere, the interviews were prone to last much longer than planned. Despite my restraining efforts, the longest discussion lasted about 90 minutes, however it was considered that all the necessary information was obtained through by the planned questions.

Further data was collected from the written material given by the target company and the company web pages and by observing people during visits to the company facilities. The company had made a long report for the GPTW institution for the 2016 competition, which was given to the researcher after the first discussions with the company CEO. This gave a good background for understanding the company's functional philosophy. Unfortunately, the GPTW institution did not give permission for the company to give their research data to third parties. Before, between and after the interviews people were observed working in their facilities and notes made. Observation was quite easy as they have open office facilities. It supported the understanding of the company leadership culture revealed from the interviews and from the relatively long report for the GPTW institution. For instance, the means of organization design, non-hierarchical leadership and casual working could be realized from the office construction and people's general behavior. This will be discussed, revealing support for the interviewee stories, later in the findings section.

Data Analysis

Data analysis is the process of bringing order, structure and interpretation to a mass of collected data. Typically, data collection and analysis go hand-in-hand to build a coherent interpretation of the data (Marschall & Rossman, 1999). In the middle of the interview process, when the material was being transcribed, a picture of the conclusions began to take shape. The researcher had a certain kind of proposition of the phenomena already before this work, as they had followed the company and its competitors already for some years. Later during the data collection phase a general picture of the final analysis could be worked out.

According to Marshall and Rossman (1999), typically an analytical procedure has six phases: organizing data, generating categories, coding the data, testing the emergent understanding, searching for alternative explanations and writing the report. When all the interview transcriptions had been made, the reports and company material were read and the researcher began to sketch what could be found from the data. All ideas reoccurring from the material, especially issues emphasized in the discussions were noted. After that, the researcher read the material again, supplemented the findings and searched all correctives needed for settling the main ideas to be written up. During the analysis process, the target organization was contacted to strengthen these perceptions. Compared to Marshall and Rossman's (2006) proposed procedure, the analysis was relatively straightforward, as knowledge of the target company before the research was quite deep and the data gathered was not very wide. So, the general view of the possible conclusions was highlighted in quite a straightforward manner.

The proposition for the research framework was the background for the pattern matching as described in the theory part conclusion. According to Yin (2009), pattern matching compares an empirically based pattern with a predicted one. In the present research, the target is to study whether the JCM is relevant in the target company's success and discover possible needs to extend the model. The next chapter reveals the findings and makes a proposition for the model extension to make a Great Place to Work in an ICT company.

4 Findings

In this chapter, the findings are presented from the empirical part of the study, based on the data collected from the interviews, the organization's material and observations. Firstly the target organization's core job dimensions are described, secondly the organization features of growth need strength and context satisfaction are shown, thirdly the formation of personal and work outcomes are examined and finally it looks at whether there is a needs for JCM modification leading to good personal and work outcomes.

The target company's final goal is to build growing and profitable results for its share owners. It is a question of an ICT business involving knowledge-intensive work, and in the customer project software business, the results are based on the knowledge workers' performances. As mentioned earlier, the present research focuses only on the company's inside factors which should lead to good personal and work outcomes. The next section describes how the target organization's core job dimensions are organized and their influences on the personal and work outcomes. The critical psychological states are omitted, as in most research in the JCM field.

4.1 Core Job Dimensions

According to the interviews, the most popular words concerning the company leadership philosophy are freedom and its derivative responsibility – work autonomy. Already in the recruitment stage freedom to decide everything concerning the individual's working is emphasized. Therefore, the core job dimensions are described mostly in the light of work autonomy. The leaders do not want or mostly are not able to decide what, how and when people should work, as the Helsinki office CEO described:

“My main task is to make the people working possible here and finally I have succeeded, if I'm not needed here ... I don't think I will ever fully succeed in it.”

Everybody can decide which projects they want to participate in and which projects they are mostly interested in. For some beginners, it can take some time to fully enjoy their freedom. As the Helsinki office CEO stressed, people must lead themselves in what, when and how they work – he talked about entrepreneurship inside the enterprise, everything being based on trust. A couple of experienced workers noted as follows:

“I have mostly very capable team members, mostly entrepreneur minded people making decisions themselves, I can trust on them, I can say ...” [Developer, 30]

“We can decide almost all concerning our working, projects I participate, which tasks I take and generally how my role is formed.” [Developer, 38]

According to the company leadership philosophy, it seems job autonomy is a key part. Therefore, the other core job dimensions are mostly formed according to people’s own choices in the workplace. The next section describes the target organization’s core job dimensions in detail, mostly outlined by the worker themselves.

Task Variety, Task Identity and Task Significance

In the JCM, the first core job dimensions are task variety, task identity and task significance, which lead to experienced meaningfulness of the work (Hackman & Oldman, 1976: 80). They seem to be important in the target organization and together with the others, in different bundles they cause different personal and work outcomes. However, according to the target organization’s leadership principles everybody can quite widely decide their task variety level, and managers do not influence this. The employees can decide what role they want to take, which projects they want to take part in and also which available tools they want to use.

Concerning task identity, the employees can decide how large a part of the work process they want to take and timetable work execution in the framework of the customer needs. Finally, if the employees can decide which projects they take part in, they can also influence their work significance, which are the things they think they are interested in. The leaders try to influence people generally regarding their work significance, but not in detail. One of the employees described their job content as follows:

“I can influence my job content myself, the foreman never comes to say what to do ... sometimes the company salespeople propose if I could take part in a project ... sometimes I myself have to find out the work significance ... I can work any time, even in the night and not necessarily come to the office ... everything is based on the team and customer needs.” [Designer, 34]

“We can decide our roles, it is mostly my duty which project I take, what kind of skills are needed. I think mostly I’m in a significant job as I can decide quite well which projects I take and what is my role.” [Developer, 26]

When asked how often the jobs changed, one experienced worker answered:

“It depends on what you mean by job change, every project is different and tools change almost every day, it depends on the project you participate in ... anyway my jobs vary a lot, I seldom get bored. Of course, sometimes I also have some boring work phases, but it belongs to this ... we have to get the customer projects ready.” [Developer, 38]

In the target organization, task variety, task identity and task significance are mainly built by the workers themselves. They try to participate in the most interesting projects, jobs and job roles, of course in the frameworks of what is offered by the teams and customers. So generally, separate general job redesign actions by the managers are not needed, as the workers themselves do it. This is a question of work autonomy, which is described next.

Autonomy

People’s empowerment is the most distinctive feature of the company leadership, it can be described that autonomy is as being in “the DNA” of the organization. As mentioned earlier, the workers can decide almost everything concerning their working, and responsibility delegation is maximized everywhere. The only frameworks are which customer projects are available and the customer needs. As described earlier, autonomy and freedom go hand-in-hand with responsibility and trust. The employees commented on autonomy during several interviews, with some typical comments as follows:

“I’m trusted, nobody controls how I work, I can work freely with my customers.” [Developer, 26]

“Our bosses actually have no role in our working, in our team we have a kind of team leader having responsibility for the whole ... but nobody tells us what and how to do. The customers tell us what to do, together in the team we design the projects’ direction.” [Designer, 28]

“Yes ... the jobs can be challenging, as we can influence them ourselves we have a big freedom to do things, choose projects ... it is mainly up to you what challenges you have.” [Developer, 30]

“It’s a combination of freedom and responsibility ... they [leaders] tell us to work as we would work ourselves, they trust us to make the right decisions.” [Developer, 38]

The previously mentioned descriptions were repeated through all the interviews, so employee autonomy seems to have been maximized in the organization. In the target company, people are responsible for their work outcomes, and the leaders have only enabler roles.

Feedback

People need feedback to realize their work performances (Hackman & Oldman, 1980). In the target organization, there is an informal feedback system named “Ei huono” (“Not bad”), described later, in the HR system, but not all the employees are satisfied with the company’s general feedback systems. Beginners and workers with experience in traditional workplaces in particular have some difficulties. Some of them expect more feedback from the managers, as one beginner described:

“I don’t experience our culture supports feedback giving ... I must look for it in my working. Of course, if I reach some exceptionally nice results, I can get some official recognition.” [Developer, 26]

The leaders mostly trust independent work and that most feedback is given by the customers and teams during the everyday work. The company CEO described feedback giving as follows:

“I can’t meet very many people in their everyday work ... feedback comes mostly from the customers and teams. Of course, if we recognize here in our office some especially good performances, for instance something improving working atmosphere, we give recognition to them.”

In the target organization, there is an informal recognition system, “Ei huono” (“Not bad”), where everyone can speak on their co-workers’ performances. Through this system, the employees get the most recognition from their co-workers and are rewarded publicly. This has not been taken seriously among all the employees. A couple of the most experienced workers mentioned they have the system, but described its influence as follows:

“We do have an official feedback and recognition system ‘Ei Huono’, but I think it is kind of a ‘larking system’, all of us we don’t take it seriously. The best feedback giver is the work itself, or the customers.” [Designer, 34]

“Yes, we have a system ‘Ei huono’, but not efficient work feedback structures, for instance I haven’t had any development discussions during my employment, which I could order if I wanted. It’s kind of a daily work feedback system, but in fact it’s OK.” [Developer, 38]

The company leaders trust that the best feedback and recognition can be reached in everyday life from the team members and customers, so the employees must be independent and capable themselves to manage their working (autonomy).

All in all, almost the whole JCM core job dimension formation rests mainly on the employees’ responsibility in the target organization. Because of their autonomy, people decide on their own task variety, task identity and task significance. The company has a certain kind of feedback system, but mainly the feedback system

of the work itself is trusted. The leaders only try to create the circumstances, atmosphere and give economic support in making the workers' jobs possible.

4.2 Moderating Elements - GNS and Context Satisfaction

In the original JCM, high growth need strength (GNS) individuals are defined as having strong needs for personal challenge and accomplishment for learning and personal development. These traits refer to learning, achievement and active looking for growth opportunities (Hackman & Oldman, 1980; Graen et al., 1986; Shalley et al., 2009; Zargar et al., 2013). According to the JCM developers, context means the job's external issues like perceived payment equality, job security and relationships with co-workers and superiors (Tiegs et al., 1992). Next firstly the target organization's personnel profile and employee selection system are described, and secondly the organization's context satisfaction issues.

4.2.1 Organization Personnel

Organization Employee Profile

According to the interviews, the target organization personnel can be described as consisting of independent, brave and self-confident individuals. Many of the interviewees regard the personnel as hard-core professionals. Already in the selection phase it is required that people must be autonomous individuals who can when needed act alone and make decisions concerning their working. Professional capabilities in the software business are prerequisite for the chosen candidates. Generally, trust building is a key part. The interviewees described their colleagues as follows:

“Our organization culture is kind of it is supposed we are in a certain way self-confident individuals ... we try to be independent, social skills are needed to find a role in the organization, not as in a traditional organization, where your role and tasks are given.” [Developer, 26]

“The people here are relaxed ... there are a lot of brave individuals here ... they can spontaneously make a presentation to the others.” [Developer, 30]

“Generally, the people here are very skillful and entrepreneurs as their nature, mostly I can trust them. Maybe it is a question about the recruitment process, the same profile individuals are selected.” [Developer, 38]

“The people here are relaxed extrovert individuals, not as we traditionally have proposed in the software business.” [Developer, 24]

” I think the company has selected hard-core professionals, experts ... it’s fascinating to belong to the group.” [Developer, 30]

“The central part of the work is learning and if your attitude is that you are a ready professional, you are in the wrong career.” [Developer, 38]

The purpose in the target organization is to choose individuals who genuinely are “Vincit-minded” as the company GPTW report (Vincit Group Oyj, johanna.pystynen@vincit.com, Great Place to Work 2016 Culture Audit, 17.6.2016) terms it, suit the company culture, enjoy the software business and probably will enjoy working in the company environment. According to the report, this influences the people selection criteria and makes the company culture what it is. The next section describes firstly the company recruitment process and then what kind of employees are preferred, how the previously presented employee profile has been formed.

Employee Selection System

The company HR Director is responsible for the recruitment process at the Vincit Group Oyj level. In the Helsinki office, there is one general administration person, who takes care of the office. According to the GPTW report, the whole personnel takes part in designing and developing the recruitment process, “choosing the co-workers for themselves” as the report describes. The company advertises the workplaces everywhere ICT personnel can be reached, mostly through digital channels. It also has co-operation with the universities on recruitment. New jobs are advertised primarily in the company’s inside channels for “Vincit-people” in pursuing

“dream jobs” as they express it. At the moment, they are searching for new workers all the time, not necessarily for a certain role.

The company trusts only their own recruitment processes; headhunting is not used as it would risk their company culture. The CEO assistant, who has responsibility for the Helsinki office argued this as follows:

“If we think about the recruitment trends, more and more headhunting is used in this industry ... in a way the process is outsourced, but it has also risks ... therefore we handle the process ourselves. The process has three phases and it takes a lot of time and resources, but still we want to invest in it ... it is a message outside and is a part of our [employee] introduction. We don't want to risk our company culture, the 'DNA'.”

According to the report, the recruitment process is kept as short as possible. After receiving their job applications, all potential ‘Vincit-minded’ people are invited to a job interview, independent of whether the company has projects available. They have three interviews. In the first interview, HR personnel survey the applicant’s general suitability for the company culture and try to give them as good a description of the work nature and working environment as possible. They want to make sure the applicant understands realistically the job company culture and means of working already at this stage. In the second interview there are more participants, mostly possible future team colleagues, to make it clear whether they would like to work with the applicant. At this stage, the main technical skills are also checked. If the first interviews reveal the applicant could be a potential company worker, the company CEO conducts the final interview. If the applicant is accepted by the CEO, HR sends a job offer to the applicant with all central terms of the employment contract. After signing the contract of employment, a careful employee introduction begins (Vincit Group Oyj, Great Place to Work 2016 Culture Audit, 17.6.2016).

According to the report, the central features of a worker are suitability for the company culture, interest in software developing work, sense of responsibility, enthusiasm for the work and a relaxed nature. The company would like them to be active

and willing to develop the company, share their knowledge, learn together and do customer service work. The features mentioned concentrate on developing and maintaining the company working and leadership culture. The company searches for “the right” personalities, whereas software developing skills are self-evident, as the Helsinki office CEO described.

“Self-leadership is the key, it is what we base on this in the individual level ... for somebody it suits, for somebody else it doesn't ... for those who it doesn't suit, they are not working or will not work for us, it's that simple.”

“In the recruitment stage, we must be able to recognize the person is such, can operate in this kind of almost chaotic environment ... we have to make clear they are responsible for what they are doing and free to do things they think are best. We try to stress, ‘take the ball and run with it’.”

Although the company wants to take technically talented people, that is not enough, they must suit the company culture. The CEO continued:

“The person can be however talented, but if they don't suit the culture, we don't take them, because it causes more work for me ... I don't want the company culture to be spoiled.”

The CEO's assistant, having responsibility for the Helsinki office recruitment process, put it another way:

“Our feeling of the candidate's suitability ‘maybe’ means ‘no’.”

For the target organization, it is very important new workers can get along with the other workers and can be trusted. When talking about the trusting environment and general work community, one software developer noted:

“We interview the candidates ourselves, we get acquainted with those guys very carefully if we want to do work with them or probably could trust them.”

[Developer, 38]

When talking about the general community features, another developer described the features of the people that would be recruited as follows:

“It is very relaxed ... probably it is a question about the recruitment process, we all have the same benefits, which means we recruit people with the same profile guys ... everybody feel equality ... the skills are quite close to each other” [Developer, 30]

In knowledge-intensive organizations, high-GNS individuals are preferred (Uruthirapathy & Grant, 2015), as in the target organization. The CEO’s assistant with responsibility for the Helsinki office recruitment put it as follows:

“We trust we have recruited smart people, they are experts and can make decisions themselves in each case ... we search for proactive people, willing to learn and develop themselves ... the recruitment process is very crucial in it. We are in some way a homogeneous group, but heterogeneous in the personality side, but however congruences can be found, so we can get along very well with each other.”

According to the present research, the recruitment process and the kind of individuals chosen is very decisive when building and maintaining the organization’s culture. The people like that they can “choose their co-workers” and decide their core job dimensions, whereas the leaders do not want people they have to lead. Already in the beginning of the company history the intention was to make a good workplace with a modern leadership culture and according to the Helsinki office CEO: “Not all types of personalities can make and develop it”.

4.2.2 Context Satisfaction

Context satisfaction, according to the JCM developers, is mainly a question of perceived payment equality, job security and relationships with co-workers and superiors (Hackman & Oldman, 1976: 80). In the target organization, there seem not to be big problems in payment systems equality, job security and relationships

in general, hindering personal and work outcomes formation, as can be noted next.

Payment Equality

The people in the target organization are mostly satisfied with their payment level, payment system and fringe benefits and they feel equality in it, as noted later.

According to the Helsinki office CEO, the workers have on average a 3000 euro fixed wage per month and rest of the wage is paid based on individual and company profit making. All the people are in the same payroll system from the trainees to the company CEO (Vincit Group Oyj, Great Place to Work 2016 Audit 17.6.2016). The company business is based on hourly charges for customer project work. The workers can decide their earnings by adjusting how much they work.

According to the Helsinki office CEO, in the Helsinki office they have also invented a new type of payment system. The company is based on a co-op, which consists of the company workers. It is completely led by the workers, for instance the company CEO does not take part in leading it. The company moves part of its monthly profit to the co-op and the personnel can decide how to use it. This is experienced as fair by the personnel as all, including the leaders, are at the same level concerning profit sharing. According to the GPTW report, the company also offers many different fringe benefits; for instance, free massage at the company facilities, holiday club services, exercise benefits, interest clubs and insurance services to name some. An interesting fringe benefit is the “Vincit motherhood package” mentioned in the report.

According to the interviews, the workers are very satisfied with their wage and other fringe benefits. Some statements the interviewees gave when asked if they were satisfied with their wage follow:

“I’m more than satisfied for my wage ... I’m on ‘the wage hill’ compared to my work experiences and very satisfied for the other benefits ... free massage, lunch credit, holiday clubs, teambuilding seminars abroad etc. are offered to all of us.” [Developer, 30]

“Yes, I’m very satisfied ... and the other benefits, better than I ever could imagine, how it can be in this business ... I feel it’s equal for all of us.”
[Designer, 28]

“Yes, I’m satisfied for my wage and the other benefits ... as I roughly know what is generally paid in this industry, compared to it, it’s good.” [Developer, 26]

Generally, the payroll systems and fringe benefits are in very good shape in the organization and are experienced as equal. Equality means everybody including the leaders are basically in the same system and the company profits are shared equally via the co-op.

Job Security

As mentioned earlier, the people selection process has been invested in a great deal in the target organization. It is hoped the right ‘Vincit-people’ are chosen. However, if in some reason they do not succeed, they are prepared for it. Firstly, in the target organization they have a so-called “100 % satisfaction guarantee of employment” for the candidates, as the CEO assistant described:

“It means that if a candidate for some reason states during their trial period the work place isn’t suitable for them and they don’t want to try anymore, the company promises 2 months’ extra payment to the candidate, compensation for braveness in trying another career.”

The company also offers people support for a safe chance to try entrepreneurship. The Helsinki company CEO put it as follows:

“We should support people’s dreams, but if we can’t we support them to try for instance entrepreneurship, founding a startup. We offer them also a chance to come back to us if the route was not successful.”

At the time of writing, the company had not experienced lay-offs as their business has been successful. Therefore, because of the security systems described earlier and the company’s present successful business, job security does not seem to be a major problem for the organization’s employees.

Relationship With Co-workers and Superiors

The interviewees in the target company are mostly satisfied with their relationships with their co-workers and their superiors. There are some characterizations of the co-worker relationships as follows:

“Yes, I like, sympathetic guys ... the guys willingly help me as a beginner”
[Designer, 28]

“Yes, very skillful guys, some are very strong personalities, I can learn from them. There are some guys I can hang about with in free times, I have some good friends here too.” [Developer, 24]

“It depends, I can’t give an unequivocal answer, it’s ok with about 90% of them ... I never make do with all the people.” [Developer, 38]

“I like my team members, all are nice and willing to help, experts ... I have learned a lot from them.” [Designer, 28]

The target organization’s leaders were characterized as follows:

“The company hierarchy is very low, very informal in general, I can talk to everyone without excitement.” [Developer, 26]

“The company leaders’ workplace is in the same facilities as we have and therefore they are well available ... they all behave like we do for instance in the workplace trips with all normal mishaps, they are very approachable ... it is difficult to use a leader title for them.” [Developer, 30]

“Teemu is as one of us, a colleague ... I can’t keep him as a special person in the organization. I don’t socialize with him a lot.” [Developer, 38]

“I don’t think about them daily, Teemu when he is present, doesn’t come especially to the fore ... of course he is who I have made my contract of employment with.” [Designer, 28]

As can be noted based on the characterizations, the relationships with superiors especially are not in a very remarkable role from the workers’ point of view as the company hierarchy is very low. It seems the relationships with co-workers and superiors are generally in good shape, and they do not seem to hinder the formation of job outcomes.

4.3 Personal and Work Outcomes

Based on the target company’s core job dimension features, personnel’s GNS features and contextual issues, next is described the mechanisms by which high personal and work outcomes are tried to be reached. In the background, there are the written JCM theories and the target company’s job design features with their moderating elements. The intention is to show how relevant the previously presented JCM is and what modifications may be needed (i.e. model extensions) in the target organization’s context in the formation of work and personal outcomes.

4.3.1 High Internal Work Motivation

According to the theories, high internal work motivation in the JCM is the result of all the core job dimensions and is a prerequisite for all the other personal and work outcomes (Hackman & Oldman, 1976:80). It is at the heart of good personal and

work outcomes. However, according to Piccolo et al. (2010), autonomy in combination with task significance in particular may influence the meaning of the work and is behind the formation of internal work motivation. People feel they are doing something important and at the same time can decide about their working.

The words freedom and work autonomy are key and are very much the reasons for work motivation in the target organization. In addition, interesting and significant projects are important in intrinsic motivation formation. Some experienced software developers described motivational factors at their work as follows:

“Motivating ... it is company culture and that you can be your boss ... you have freedom for self-actualization, and take jobs that are interesting and meaningful for you.” [Designer, 34]

“It’s something, is in connection to the designing software, you can develop some innovative and new solutions, which have meaning to the others. We want to make as good solutions as possible ... it is fascinating.” [Designer, 28]

“[On the question of task variety] ... most often challenging projects and tasks, but not too challenging, furthermore we have freedom to make our own solutions. Of course, sometimes you have to do some routine and boring tasks and sometimes customers place restrictions.” [Developer, 38]

“I’m satisfied, it’s freedom which motivates ... You can choose your tools and work methods can be discussed ... there are no absolute truths and rigid processes, which gives you freedom to try many things.” [Developer, 26]

Some of the employees also mentioned the motivating organizational culture and good co-worker relationship as motivating factors, as one software developer described:

“The company culture and smart co-workers ... when we monthly look at the company’s good results, which has been a common effort ... you can be a part of such a great group ... I have very smart and competent co-workers, everybody tries his best.” [Developer, 30]

“Interesting projects, good atmosphere and tasks you can learn new things and develop yourself ... it’s fascinating.” [Developer, 24]

As Piccolo et al. (2010) mention, an ethical leadership style in particular ignites in people a feeling of high job significance and by empowering them influences high work motivation. According to the interviewees, it seems that kind of special leadership culture in the target company motivates people.

“... Mikko [Kuitunen, the company founder] is very important to the whole company ... he is the reason I’m working here. He really thinks with his brains and dares to say what he thinks ... he ignites my motivation by his speeches. The company has a good reputation.” [Developer, 38]

“The leaders try to inspire us, it makes a good atmosphere ... and when given the chance to choose interesting projects, you get motivated automatically.” [Designer, 34]

The present research seems to support for instance Piccolo et al.’s (2010) research that significant work and autonomy are an especially important part of high internal work motivation. It seems also organizational contextual factors, inspiring culture and good co-worker relationships keep the motivation level high. As mentioned in the personnel profile description, the company has selected high-GNS people and they seem to support each other’s motivation. People seem to be proud of the organizational culture and the company as such.

4.3.2 High Quality Work Performance

In the target organization, when it is a question of the ICT business and the customer project software business, the company results are based on the knowledge

workers' performances. As mentioned in the theory section, several studies have proven that the autonomy, job variety and feedback bundle of characteristics are mainly behind the quality work performance, among which job autonomy as such is a robust predictor of it (Humphrey et al., 2007).

In the target organization, several interviewees pointed out good work performance and good results of the work are an absolute value. This seemed to be supported by the previously described work internal motivation level and inner endeavor to get good results feedback from the work. For many, getting good results is a kind of indiscreet question "to work as I would work for myself". As can be noted from the interviewees' comments, one context satisfaction component, co-worker and superior relationships seemed also to improve people's work efforts. Work autonomy was also a key part in pursuing a good work performances, as people can freely organize work in what they feel is the most effective way without restrictions. Lack of proper feedback was a problem for some. Typical answers, when discussing the factors involved in why people wanted to create good results, included:

"I have extremely competent co-workers, they put me a certain kind of pressure, I have to be as competent as they are ... belonging to this kind of group it makes me to do my best results ... it isn't always possible. Sure, everybody has freedom to decide their work effort and work performances."
[Designer, 30]

"If I do something, of course I try to reach the best and the most qualified software solutions, I myself have chosen the challenge ... [laughs]... I don't think your question [what motivates you to make good results?] is relevant ... it is self-evident some psychologist should study it ... that's how it is."
[Developer, 38]

"It's a kind of inner need ... if you begin to do something, you have to do the best, especially if the circumstances are very good and you can decide yourself your methods. On the other hand, I haven't got feedback very much other than something from the customers, so it is a bit troublesome to judge the results." [Developer, 30]

The Helsinki office CEO also expected that people's work performances were based on inner needs and work autonomy. He thought people's internal motivation is behind it. He noted the people are independent actors, entrepreneurs inside the enterprise and wanted them to do their best:

"It is a combination of freedom, autonomy and responsibility model... when people themselves decide working methods. I see motivation formation is purely, when talking about project work ... this is 'an artisanal profession', so that everybody tries to do the best possible results for their customers...it's [doing good quality] kind of a conscience code. Of course, money is one of the factors, but not the main one ... the final results are the most important ... at least I want to believe that."

"Everybody is given freedom, they can work when, how and where they want ... also at home, maybe they are proud they can control their own career and life ... that's what I want to believe ... motivated and satisfied people are efficient."

The CEO's assistant with responsibility for the Helsinki office recruitment described people's work performance formation as a result of motivation and a kind of result of taking care of the people. One software designer agreed with her. They commented on the formation of work performance as follows:

"We are not able to offer people career development chances, hierarchically, titles etc. ... but we can offer them chances to freely develop themselves as professionals. I think the motivation is formed by the everyday working, concrete activities, if they can enjoy in the interesting projects, can choose themselves. We do everything that the circumstances make possible. We know job enjoyment leads to work motivation leading to committed people and better work performance quality."

"The people here are satisfied ... they are taken care of here ... the company seems to do its best improving the circumstances for the project work,

removing work obstacles ... for me it means I try to do the best possible results of course, it's also a kind of inner feeling to achieve good software code." [Designer, 28]

According to the interviews, as the JCM theory proposes, job satisfaction and motivation are the factors behind high quality work performances. Employee autonomy seems to be the most important of the core job dimensions behind it. As previous theories state (e.g. Humphrey et al., 2007; Dodd & Gangster, 1996; Sripirabaa & Maheswari), also in the target company a proper job feedback system would be needed for the formation of high work performance. However, as the interviews indicated, not everyone was satisfied it as they could not realize their work performance and make possible corrections according to it. This also influences job satisfaction (see next chapter), which has a direct influence on work performance. When talking about work performance formation, the factor of task variety mentioned in the JCM did not come out. As described earlier, in the target company work, task variety is inherent, as the business is based on complicated project work and as such it is seldom focused on. Good co-workers relationships seemed also to increase work efforts, which is a link to better work performance.

A new nuance of the job dimensions in the formation of work performance was the target company's good way of taking care of people. Many interviewees mentioned they felt they were obliged to do their best, because the company has done so much for them; of course good working circumstances themselves may help their work. As the section on context satisfaction described, the fringe benefits are an important indication of taking care of people.

4.3.3 High Satisfaction with the Work

According to the theories, work performance feedback, task variety and autonomy also have decisive roles in the formation of job satisfaction. In addition, task variety as such can increase job satisfaction, especially in complex knowledge work, as it leads toward better skill utilization and a feeling of work meaningfulness (Hernaes & Mikulic, 2014).

In the target organization, work autonomy was absolutely the most important job dimension people mentioned when talking about job satisfaction, as can be noticed from their comments:

“It’s freedom to decide my working issues, it’s supported in the right way, the leaders seldom, in fact never come to say what and how do things. We are trusted I think, I can work freely with the customers, nobody is watching in the background.” [Developer, 24]

“It’s freedom, I can choose my tools and way of doing things in varying projects ... when I hurry, it can lower my satisfaction.” [Developer, 26]

“Yes, I’m satisfied, very good independent team around me, we can make decisions about what and how to do our projects ... very big variance of different projects, we seldom get bored.” [Developer, 30]

Some beginners also appreciated the high work autonomy, but the lack of feedback seemed to lower job satisfaction. One of them felt even insignificant in the work because of it:

“Freedom to work independently is something I like ... and generally the company leadership philosophy. But sometimes I feel even insignificant in the work, I think the company doesn’t support feedback giving, I don’t know if it’s my personal problem, the people here are very self-confident.” [Developer, 26]

“Especially at the beginning of my career, freedom was a bit confusing, I had to find projects and tasks myself and when doing something nobody was giving feedback, if it’s OK or not.” [Developer, 24]

Context satisfaction issues such as good co-workers relationships and payment systems as mentioned in connection to the formation of job satisfaction were presented earlier. Caring for people was also a strong influencer on job satisfaction formation. Typical comments about the influence of being cared for included:

“We are taken good care of in many life situations, I’m really satisfied with this, I couldn’t imagine better circumstances.” [Developer, 30]

“In the company, there are inside supporting groups, which could help us if something is wrong with us ... I think it helps people if they are unsatisfied on something.” [Designer, 34]

In the company, the leaders trust people to be satisfied by normal working challenges, their role is only in creating suitable working circumstances. When talking about job satisfaction formation in the target company, the CEO noted:

“Satisfaction and happiness is a moving target, nobody is completely satisfied ... satisfaction in our company is something the people make themselves, it’s in the category self-leadership, when people have chances to influence it. Our job is to make circumstances for it, reacting the soonest possible, if something goes wrong.”

In general, the interviews supported the proposal in the theory section that feedback, task variety and autonomy are important factors behind the formation of high job satisfaction. Task variety as such did not cause special comment as all the company’s business is based on a high variety of projects. Autonomy was a particularly important part and lack of feedback was stated to lower job satisfaction. Context satisfaction issues such as wages, security issues and co-worker relationships seemed to support job satisfaction or at least had no disrupting effect on it. As in the formation of work performance, taking good care of people was mentioned in the formation of job satisfaction. Job satisfaction has direct connections to organizational commitment, as can be noted in the next chapter.

4.3.4 Low Absenteeism and Turnover

According to the theories in the original JCM, low employee turnover and absenteeism can also be influenced by the job characteristics design of all the core job dimensions, being kind of by-products of the feelings of intrinsic motivation and

job satisfaction (Hackman & Oldman, 1976: 80). Core job dimensions such as task variety, task identity and autonomy were particularly regarded to lower people's absence measures: autonomy and task variety were highlighted (e.g. Rentsch & Steel, 1998). The research also surprisingly noted a tendency for task significance to have a positive influence on absenteeism and turnover, but through proper feedback the influence could be mitigated (Fried & Ferris, 1987).

The target organization is an ICT company and the software designers and developers mainly create the company's success. The personnel are the most important tangible asset of the company and according to Uruthirapathy and Grant (2015) among ICT personnel turnover is generally especially high. Therefore, the target organization also has good reason to take care of absenteeism and turnover rates.

According to the interviews, absenteeism in the target organization seems to be very low, as some typical answers tell:

"I'm very seldom absent, probably if I'm sick, but then I can work at home ... generally people here are very seldom absent." [Developer, 38]

"Very seldom ... I have no reason to ... I don't remember when I was sick when working here." [Designer, 28]

"A couple of sick days I remember, but in general very seldom because of work." [Developer, 30]

In addition, turnover in the organization is low, as the CEO and his assistant described:

"And turnover is very low here, about 1-2%, most of them have left our company because they have founded a startup, which we have supported. Of course, there are couple of cases that haven't adapted to our culture."

"Turnover is about such ... 3 people have left [60 employees together in the company] during last year, of which two have founded a startup, we have

supported it, it is very nice they take that kind of step. One of them was my mistake at the recruitment stage, he didn't adapt to our company ..."

Concerning commitment and why they like to stay in the target company the employees described it as follows:

"I'm still in the internship stage here, I'm searching for permanent employment. I have worked in some startups ... here I can note the workers are cared for. We maximize profit and worker welfare ... instead of turnover maximizing ... the people are clearly taken care of, it is a big issue ... reducing work stress by several benefits like free massage, supporting people's hobbies etc." [Developer, 24]

"It's difficult to imagine working in other places ... I like the job and freedom, compared to what happens in the environment [other organizations]." [Developer, 30]

"I don't plan other employers, to change workplace ... on the other hand this is only a workplace, but I don't believe I could find better circumstances, I'm satisfied with the job." [Developer, 38]

The CEO assistant commented on people's commitment as follows:

"I think it's important ... we build different models how to commit the people. I think the work community is like that, it supports people in different life situations. We don't restrict people working, but try to understand people different life situations ... if they experience feeling they are understood, get support in different situations, often it leads to commitment at least at a certain level."

The CEO described commitment as follows:

"Sure, I think all the people are committed to the company as much as it is possible. There are so much different commitment levels ... but we must be

capable of supporting people's dreams and careers in many ways. Of course, many kinds of caring for people are self-evident."

"Concerning producing people's pride in the company, they can say they are working for us, it resonates in the customers and their friends in a way that this is a good workplace and work life. We give good working circumstances for the people, we don't repress the people and then abandon them ... I think the line between individual life and work life is quite shady."

Caring for people has many features in the company, it is in the 'DNA' of the organization. The list of the measures in the GPTW report (Vincit Group Oyj, johanna.pystynen@vincit.com, Great Place to Work 2016 Culture Audit, 17.6.2016) is very long and it is not feasible to describe all of them. As a conclusion it can be stated that the company workers, as knowledge-intensive individuals and human beings with their needs, are understood. The working circumstances with workers' individual needs are tried to be fitted together. According to the interviews, it seems this has caused at least *pride* and *commitment* in the organization.

As the interviews revealed, taking care of people came out clearly. When talking about absenteeism in general, the interviewees pointed out their general satisfaction in their work and especially the organization's capability of taking care of them. The core job dimensions as described in the theory section as such did not come up in this connection. However general job satisfaction issues, described earlier, seem also to be behind the organization's low absenteeism and turnover. As described, behind job satisfaction are core job dimensions like autonomy, task variety, task significance and feedback. As mentioned earlier, context satisfaction issues such as payment level and equality, job security and relationships with people do not seem anyway to disrupt people's job satisfaction.

5 Discussion

The intention of the present research was to study the relevance of the *Job Characteristics Model* (Hackman & Oldman, 1976: 80) in the formation of good workplaces and possible needs for its modification from a successful ICT organization point of

view. The researcher regarded the research as very important and interesting as they also have a long working history in the ICT industry and organization effectiveness and welfare have been key when searching for organizational success. As noted in the presentation of the target company, the company has good general performance in the ICT industry from an economic point of view but also as an employer and a good workplace.

In the theory section, the JCM was described from several researchers' points of view. Firstly, the model core job dimensions were described, leading to the critical psychological states and their mediating elements, people's growth need strength (GNS) and context satisfaction. Secondly, the theories of the formation of personal and work outcomes in the JCM were described – which are the mechanisms between the core job dimensions and the personal and work outcomes. The mechanisms were described by a two-stage model as most JCM studies have omitted the influence of critical psychological states on the model. Finally, in the findings part, the results of the research question were described, demonstrating how the JCM worked in the target organization, in a successful ICT company rewarded as a good workplace, and examining if there was a need for modification of the model.

For the research methodology, case study research was chosen, which included a review of the target organization's background material and data collection via interviews and observing. The interviews were semi-structured and the questions were derived from the proposed background factor theories. The workers of the target organization were interviewed in different tasks and taped. Thus, the research data included written material received from the target organization, the interview material and the notes made about the observations when visiting the company facilities. The conclusions reached by the study are presented next.

5.1 The Main Findings

The intention of the present research was to study whether the original JCM is still relevant in modern knowledge-intensive organizations rewarded in the GPTW competition and whether it needs modification.

The research generally supported the relevance of the JCM in knowledge-intensive organizations such as an ICT company, but not as a framework as such. Some core job dimensions were emphasized and others had less significance. For instance, people's autonomy was revealed to be the most important factor of the core job dimensions in the formation of personal and work outcomes and it was also mostly behind the formation of the first three core job dimension. Because the best possible personal and work outcomes in the organization can be reached by high-GNS people, a good employee selection system was emphasized in the target organization. Furthermore, a new job dimension, good care for people, was emphasized. The modified JCM based on the present research results looks as follows:

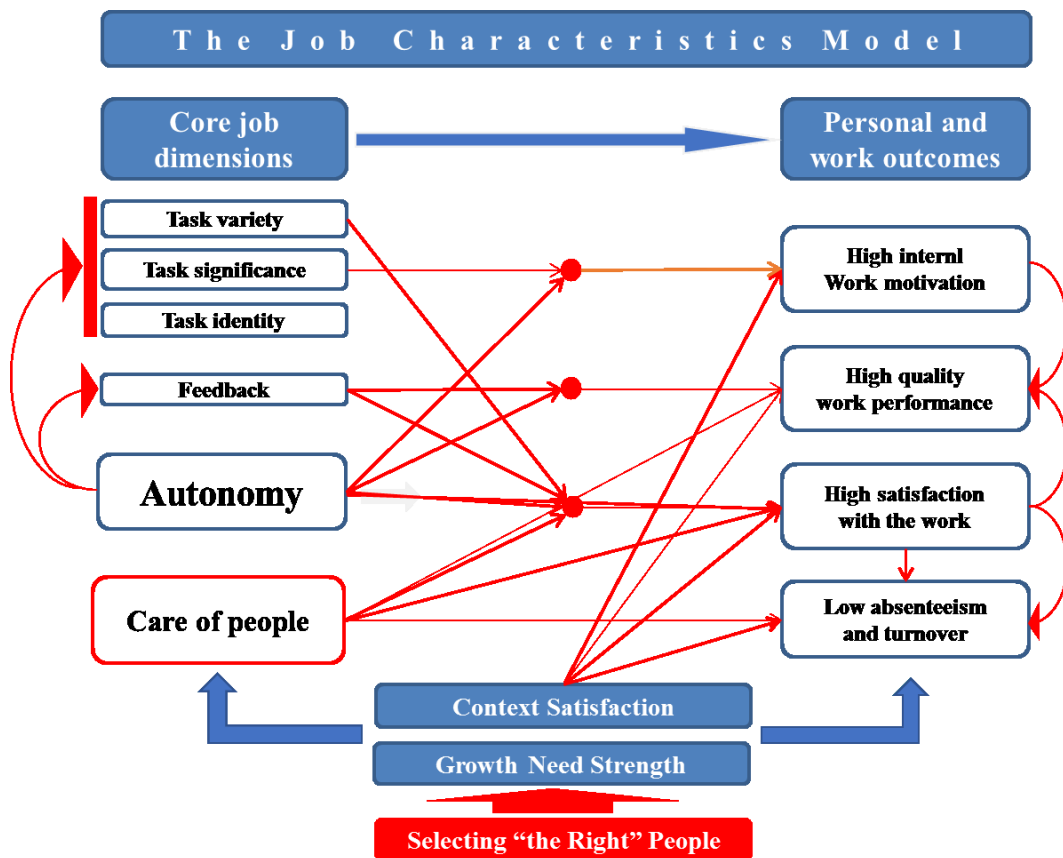


Figure 3: The New Form of the Job Characteristics Model

Task identity as the other core dimensions seemed to be inherent in the target organization and therefore was not specially mentioned in the interviews when talking about outcome formation; however, it seemed to be appreciated. However, it and the other two first core job dimensions played their parts in the formation of the

high work and personal outcomes via autonomous behavior, as the people themselves were responsible for most of the formation of the core job dimensions. The people seemed to look for jobs and tasks that they were interested in, which seemed to support the formation of good work outcomes.

Task significance formation and feedback giving systems as such were a little problematic in the target organization, especially among beginners and people with a short history in the company's autonomous culture. They themselves were mainly responsible (autonomy) for choosing their job challenges. In feedback giving, the company leaders mostly trusted feedback direct from the work itself, the customers and the teams. However, although these were slightly problematic core job dimensions, feedback on work formation seemed not to be a general problem as the company prefers people who have a high GNS, who are independent of nature and will perceive such jobs as providing opportunities for considerable self-direction (autonomy), learning and personal accomplishment.

In the target organization, work significance and work autonomy were especially important aspects of high internal work motivation formation. It seemed that organization contextual factors, such as an inspiring culture and good co-worker relationships, also kept the motivation level high. Work autonomy and feedback as emphasized in the theory section seemed to be important when seeking quality work performances. Feedback, task variety, autonomy and taking good care of people were revealed to be the most important factors behind the formation of high job satisfaction. Job satisfaction was also supported by context satisfaction, described later. When talking about absenteeism and turnover in general, the interviewees pointed out their general satisfaction with their work and especially the organization's capability of taking care of them. The first three core job dimensions described in the theory section did not come up in this connection as such. However, general job satisfaction issues, are described earlier, seemed also to be behind the organization's low absenteeism and turnover and behind the job satisfaction are the core job dimensions like autonomy, task variety, task significance and feedback. As a new dimension, good care of people seems to be strongly behind the general job satisfaction and low absenteeism and turnover.

The target organization's context satisfaction issues, payroll equality, job security and relationships with co-workers and superiors, seemed to support people's job satisfaction, or at least did not seem to disturb it. People were satisfied with their wage level and the company profit sharing system via the co-op. Company measures to support people careers and the general good business success of the company seemed to support people's job security. The interviews clearly indicated the co-workers and superiors' good relationships.

The target organization seems to take very good care of its people, which was mentioned in many of the interviews. This seemed to have an important role, especially in increasing job satisfaction and lowering absenteeism and turnover intentions. According to the Helsinki office CEO, this is something they want to emphasize as it may make them competitive in searching for the best software employees in the hard competition of the ICT industry employee markets. There was a long list of several measures of taking care of the people in the company GPTW report, as the company endeavors to fit people's work and home life, and a long list of fringe benefits. The interviews supported the intended measures mentioned in the report.

The company's people are mainly high in GNS and of the personnel profile the company is seeking. The people selection system seemed to have a decisive role and was a kind of prerequisite in keeping the company working culture as it was. Context satisfaction and people's GNS issues seemed to support the formation of good personal and work outcomes, not necessarily not as moderators of the core job dimensions and personal and work outcomes, but not hindering outcome formation as the original JCM theory proposes (Hackman & Oldman, 1976: 80), where context satisfaction issues also had direct influences on work and personal outcomes.

In general, all the core job dimensions seemed to support all the personal and work outcomes as the original JCM proposes. However, the theory's specific outcomes were associated only or primarily with some of these job characteristics rather than with others, as Fried and Ferris (1987) in the theory section suggested. In addition, there were remarkable differences in the power of the influence of different core job dimensions on the target organization. As mentioned, the critical psychological states were not researched as mediating elements in the present research. The new

factors added to the model that help with the formation of good personal work and work outcomes are good care of people and a good people selection system.

5.2 Limitations

The research topic is relatively broad, so the present research does not give a very deep understanding for all the topic areas. All the theoretical areas should be studied in more depth, but the original interest was in describing an overall view of good workplace formation.

Some limitations should be considered in this research. Firstly, factors outside the organization were not taken into consideration, and they could influence the organization in a turbulent ICT industry environment. Secondly, the target company has an exceptional and new kind of company and leadership culture, so older and more traditional companies in other industries could present other interesting aspects of the JCM. Finally, the research material was collected only from one company and one of its offices. Studying other similar types of ICT companies, or companies that have not taken part in the GPTW competition could have widened the research. IN addition, the company chosen as a target organization has several offices in Finland and one abroad in the US. If data was collected more widely, some new company features could probably be realized. However, one company and one Finnish office in Helsinki represent a general and overall idea of the phenomena of interest in the research.

5.3 Conclusions and Future Research

The present research has concluded that the original JCM elements are still relevant in modern knowledge-intensive organizations. However, our society, working life issues and leadership methods have changed greatly from the years in which the model was developed (Chang, 2015; Hernaus & Mikulic, 2014), that remarkable model modifications are needed, as the present study reveals. At least all the core job dimensions have completely different powers and therefore the formation mechanisms of the final work outcomes cannot be completely as originally proposed. Furthermore, especially in the knowledge industry, where there is hard competition in finding a competitive work force and the general business challenges are

hard (Chang, 2015), the employee selection system must be developed and the valuable workforce demands good care. As a conclusion, the present research proposes for future managers to lead their organization so that people's autonomy is maximized while also supporting the formation of the other core job dimensions. They should care for people, allowing them to combine the job and free time, and select people to suit the autonomous working culture.

Because the JCM model is still relevant with some modifications, it requires several further studies for the future working life purposes. The model has been researched a great deal during the last decades, and as mentioned earlier, it has also been extended (e.g. Humphrey et al., 2007). The present research extends the original model by a core job dimension of taking care of people and the proper employee selection system supporting the gathering of high-GNS personnel, especially in knowledge-intensive organizations. They and their deeper mechanisms leading to good personal and work outcomes would be worth researching. In addition, relevant model extensions (e.g. Humphrey et al., 2007) should be taken into consideration.

The present research was conducted during relatively good economic circumstances in the ICT industry. As described earlier when initiating the research, the target company has grown strongly and in fact can often choose its projects and customers. This is partly caused by the good situation in the ICT industry, while the digitalization boom is going on. The company, because of its short history, has not experienced deep recession times, for instance. Therefore, it would be interesting to research which core job dimension factors would come to the fore, for instance in cases where people had to be laid off.

References

- Barrick R.B., Mount K.M. & Li N., 2013. The theory of purposeful work behavior: The role of personality, job characteristics and experienced meaningfulness. *Academy of Management*, 2013.
- Behson S.J., Eddy E.R. & Lorenzet S.J., 2000. The importance of the Critical Psychological States in the Job Characteristics Model: A meta-analytic and structural equations modelling examination. *Current Research in Social Psychology*, 5(12).
- Chang P.L., 2015. Qualitative analysis of the impact of emotional intelligence and agility on job satisfaction in the IT Industr, A dissertation presented to The George Herbert Walker, School of Business and Tecchnology Webster Unibersity in partial fulfillment of the requirements for degree Coctor of Management August 12th, 2015, Saint Louis, Missouri.
- Chen C.C. & Chiu S-F, 2009. The mediating role of job involvement in the relationship between job characteristics and organizational citizenship behavior. *The Journal of Social Psychology*, 149(4), pp. 474-494.
- Dodd N.G. & Gangster D.C., 1996. The interactive effect of variety, autonomy and feedback on attitudes and performance. *Journal of Organizational Behavior* (1986-1998)17(4), pp. 329-347.
- Dikkers J.S.E., Jansen P.G.W., de Lange A.H., Vinkenbug C.J. & Kooij D., 2010. Career Development International, 15(1), pp. 59-77.
- Eriksson P. & Kovalainen A., 2008. *Qualitative Methods in Business Research*. Sage.
- Frick E.D., 2010. *Motivating the Knowledge Worker*. Defense Intelligence Agency Acquisition, Arlington, VA, 22202.
- Fried D.K. & Ferris G.R., 1987. The validity of the Job Characteristics Model: A review and meta-analysis. *Personnel Psychology*, 40, pp. 287-322.
- Fulmer I.S., Gerhart B. & Scott K.S., 2003. Are the 100 best better? An empirical investigation of the relationship between being a "Great Place to Work" and firm performance. *Personnel Psychology*, 56, pp. 965-993.
- Gagne M. & Deci E.L., 2005. Self-determination theory and work motivation. *Journal of Organization Behavior*, 26, pp. 331-362.
- Graen G.B., Scandura T.A. & Graen M.R., 1986. A field experimental test of the moderating effect of Growth Need Strength on productivity. *Journal of Applied Psychology*, 71(3), pp. 484-491.
- Griffin M.A., Petterson M.G. & West M.A., 2001. Job satisfaction and teamwork: the role of supervisor support. *Journal of Organizational Behavior*, 22, pp. 537-550.
- Hackman J.R. & Oldman G.R., 1976. Motivation through the design of work: Test of theory. *Organizational Behavior and Human Performance*, 16(2), pp. 250-279.

- Hackman J. R. & Oldman R.G., 1980. Adaptation of Job Characteristics Model, pp. 78-80, *Work Design*, 1st Edition.
- Hernaus T. & Mikulic J., 2014. Work characteristics and work performance of knowledge workers. *EuroMed Journals of Business*, 9(3), pp. 268 - 292.
- Humphrey S.E., Nahrgang J.D. & Morgeson F.P., 2007. *Journal of Applied Psychology*, 92(5), pp. 1332-1356.
- Jonge J., 2016. The role of performance feedback and job autonomy in mitigating the negative effect of role ambiguity on employee satisfaction. *Performance & Management Review*, 39, pp. 814-834.
- de Jonge J., van Breukelen G.J.P., Landeweerd J.A. & Nijhuis F.J.N., 1999. *Human Relations*, 52(1), pp. 95-122.
- Isen A.M. & Reeve J., 2006. The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior and self-control. *Motivation and Emotion*, 29(4), pp.297-325.
- Kelly J., 1992. Does job re-design theory explain job re-design outcomes? *Human Relations*, 45(8), pp. 753-759, 766-774.
- Koskinen I., Alasuutari P. & Peltonen T., 2005. *Laadulliset menetelmät kauppatieteissä*. Gummerus Kirjapaino Oy, Jyväskylä.
- Kuvaas B., Buch R. & Dysvik A., 2016. Performance management: Perceiving goals as invariable and implication for perceived job autonomy and work performance. *Human Resource Management*, 55(3), pp. 201-412.
- Marshall C. & Rossman G.B., 1999. *Designing Qualitative Research*, 3rd Edition. SAGE Publications Inc.
- Nelson K., McCann E.J., 2011. Designing for knowledge worker retention and organization performance. *Journal of Management and Marketing Research*.
- Park R. & Searcy, 2011. Job autonomy as a predictor of mental well-being: The moderating role of quality-competitive environment. *Journal of Business Psychology*, 27, pp. 305-316.
- Pentareddy S. & Suganthi L., 2015. Building affective commitment through job characteristics, leadership and empowerment. *Journal of Management & Organization*, 21(3), pp. 307-320.
- Piccolo R.F., Greenbaum R., Hartog D.N.D & Folger R., 2010. The relationship between ethical leadership and core job characteristics. *Journal of Organizational Behavior*, 31, pp. 259-278.
- Reinhardt W., Schmidt B, Sloep P. & Drachsler H., 2011. Knowledge workers roles and actions - Result of two empirical studies. *Knowledge and Process Management*, 18(3), pp. 150-174.

- Renn R.W. & Vandenberg R.J., 1995. The Critical Psychological States: An underrepresented component in job characteristics model research. *Journal of Management*, 21(2), pp. 279-303.
- Rentsch J.R. & Steel R.P., 1998. Testing the durability of job characteristics as predictors of absenteeism over a six-year period. *Personnel Psychology*, 51(1), pp. 165-190.
- Robbins P.S. & Judge T.A., 2016. *Essentials of Organizational Behavior*, Pearson Global Edition, Pearson Education Ltd.
- Ryan R.M. & Deci E.L., 2000. Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, pp. 54-67.
- Seubert S.E., Wang E. & Courtright S.H., 2011. Antecedents and consequences of psychological and team empowerment in organizations: A meta-analytic review. *Journal of Applied Psychology*, 96(5), pp. 981-1003.
- Shalley C.E., Gilson L.L. & Blum T.C., 2009. Interactive effects of Growth Need Strength, work context and job complexity on self-reported creative performance. *Academy of Management Journal*, 52(3), pp. 489-505.
- Singh A., Singh S.K. & Khan S., 2016. Job Characteristics Model (JCM) utility and impact on working professionals in the UAE. *International Journal of Organizational Analysis*, 24(4), pp. 692-705.
- Sripirabaa B. & Maheswari S., 2015. Individual creativity: Influence of job autonomy and willingness to take risk. *Journal of Indian Management* pp. 110-118. .
- van Marrewijk M., 2003. The social dimension of organizations: recent experiences with Great Place to Work assessment practices. kim@oxfordresearch.dk /marcel@greatpalcetowork.nl.
- Tieg R.B., Tetrick L.E. & Fried Y., 1992. Growth Need Strength and Context Satisfaction as moderators of the relations of the Job Characteristics Model. *Journal of Management*, 18(3), pp. 575-593.
- Uruthirapathy A.A. & Grant G.G., 2015. The influence of job characteristics on IT and non-IT job professionals' turnover intentions. *Journal of Management Development*, 34(6), pp. 715-728.
- Vincit Group Oyj, johanna.pystynen@vincit.com, *Great Place to Work 2016 Culture Audit*, 17.6.2016
- Walsh J.T., Taber T.D. & Beehr T.A., 1980. An integrated model of perceived job characteristics. *Organizational Behavior and Human Performance* 25, pp. 252-267.
- Yin R. K., 2009. *Case Study Research: Design Methods*, 3rd edition, Thousand Oaks: Sage.
- Zargar M.S., Vandenberghe C., Marchand C. & Ayed A.K.B, 2013. Job scope, affective commitment and turnover: The model role of Growth Need Strength. *Journal of Occupational and Organizational Psychology*, 87, pp. 280-302.

Internet references

www.greatplacetowork.fi

www.kauppalehti.fi/uutiset/tassa-porssin-kovimmat-kasvuyhtiot/ZHX7QrJn?

www.vincit.fi

Appendices:

Appendix 1: Interview Themes

The research data collection is based on semi-structured interviews, which handle the topics as follows:

1. Background information of the interviewee
2. Individual Dimensions
 - a. Job content features in general
 - b. Communication with colleagues
 - c. Leadership systems from the interviewee's point of view
 - d. Motivation and job satisfaction
 - e. Compensation systems
 - f. Career development and future
3. Collective dimensions
 - a. Teamwork structure and organizational design
 - b. Stakeholder implications (customers, partners, etc.)
 - c. Work community features
 - d. Teamwork leadership
 - e. Work support and feedback systems
4. What else does the interviewee want to say?

Appendix 2: Interview Questions

Before the interview itself discuss:

- Research question, the researcher and why Vincit is the target company
- Confidential, no names published even for the company leaders
- Interview will be taped, the tape will be destroyed after Thesis submission
- Name, gender and job title

Research questions:

Individual dimension

1. Describe your typical workday/tasks?
2. How often does your work role change? What makes it change?
3. Are you able to use all the skills you have in your job?
4. Do you feel you normally cope with your tasks (level of challenges)?
5. Work significance

- a. How significant do you feel your job is? Why?
 - b. To whom are you responsible for it?
- 6. Autonomy
 - a. How widely are you able to decide your working methods?
 - b. Role of your boss/team in it?
 - c. What is your working time normally, can you influence it?
 - d. Do you have a direct connection with the company's customers and what kind?
 - e. How widely (for whom) are you responsible for your work results?
- 7. Feedback systems
 - a. From who do you get feedback on your work performance?
 - b. What kind is the feedback per giver?
 - c. What kind of feedback do you most like? Why?
- 8. Job satisfaction
 - a. For what reasons are you satisfied with your job? Why?
 - b. What hinders your job satisfaction?
- 9. Degree of motivation
 - a. Which things mostly motivate you to pursue good work results? Why?
 - b. In which situations are you mostly motivated? Why?
- 10. Absenteeism
 - a. How often are you absent from your work?
 - b. What is the reason for it usually?
 - c. How long are you absent normally?
 - d. How is it organized by your employer?
- 11. What is your decision-making role in the organization?
- 12. From whom do you get support in difficult situations? What kind?
- 13. Do you feel you are trusted in your working?
- 14. Compensation system
 - a. Are you happy with your wage?
 - b. What about other benefits you get from your organization?
 - c. Are you happy with the compensation system in general? Why?
- 15. How committed are you to working for your employer for a long time?

Collective dimensions

- 16. Do you like your team members? Why?
- 17. Do you like the company's customers? Why?
- 18. How much do you work alone and with your team?
- 19. How do you feel about your work community in general? Why?

Other questions

- 20. How could you describe the company's top leadership? Why?
- 21. Are you proud of your employer in general? Why?